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[ORIGINAL COMMUNICATION.]

THE COLORING MATTER OF LIRIODENDRON TULIPIFERA.

BY PROF. J. U. LLOYD, OF CINCINNATI.

THIS tree is recognized by country people as either yellow or white poplar. The characteristics by which the variations in name are produced reside in the production in one case of a peculiar yellow coloring matter that imparts a yellow tinge to the wood. This yellow substance is deposited in considerable proportion in the bark of the root and may be obtained as follows:

Exhaust fresh bark of root of Liriodendron tulipifera with alcohol, add some water and distil the alcohol. After some days filter the liquid and evaporate it to a semi-solid consistence, then incorporate this thoroughly with alcohol in considerable amount. Filter the alcohol from the extractive precipitate and add an excess of ammonia water to the filtrate. The brownish-yellow precipitate is then to be washed with alcohol and dried by spreading it upon glass and exposing to the atmosphere. It forms brilliant deep brownish-red transparent scales that separate easily from the glass and appear very much like dark-colored scales of citrate of iron.

This substance dissolves slowly in water, producing a yellow liquid that is changed to a dark reddish-yellow by addition of an alkali. It dissolves readily in alkaline water. It is insoluble in alkaline alcohol or in benzol, chloroform and ether. Its color in alkaline aqueous solution is very much lightened by addition of excess of an acid.

It combines neither with acid nor alkali, failing to neutralize either of them, and its precipitation from alcohol by addition of ammonia seems to be simply due to the fact that it is insoluble in such a menstruum. It is tasteless and is odorless; being of interest only from the fact that it is a characteristic coloring matter of this magnificent American tree.

JAPANESE PEPPERMINT AND ITS RELATION TO OTHER MINTS.

THE botanical relation of the Japanese peppermint plant to other members of the genus *Mentha* has been studied by numerous authorities during the last few years, since menthol has become an important article of trade. As is well known, the mints are one of the most difficult genera of labiate plants to study, there being an uninterrupted rate of transitions from one species to another, so that it is often absolutely impossible to decide where one species ends and the other begins.

Bentham believes that the ancestor of our peppermint is *Mentha hirsuta* L., but at the same time it is very similar in characters to *Mentha viridis* L. It is also certain that the cultivated species of peppermint possess a characteristic, more or less penetrating odor, the intensity of which diminishes as the plants recede from cultivation, and is nearly or entirely absent in wild-growing plants, at least in Europe.

Japanese peppermint has been referred, at one time, to *Mentha arvensis* L. var. *javanica* G.

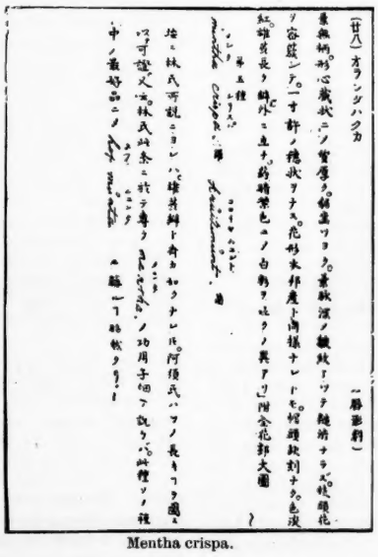
But Mr. Holmes found that every specimen of this plant which he could find had the taste of *Mentha viridis* L., and not of *Mentha piperita* L., and the same he found to be the case with *Mentha arvensis* L. var. *vulgaris* Benth. Mr. Holmes succeeded, after much trouble, in getting specimens of both the Chinese and the Japanese peppermint and found them both to have the botanical characters of *Mentha arvensis* as defined in De Candolle's Prodromus, the leaves being stalked, ovate-lanceolate, and the hairs on the stems and pedicles reflexed, those of the calyx being erect-patent, and those of the upper surface of the leaf appressed; the calyx being bell-shaped, with acute lanceolate or narrowly triangular teeth. A specimen of peppermint obtained through Prof. Gray from the United States, and labelled *Mentha canadensis* var. *glabrata* was also found to have a peppermint flavor, and to be practically identical with the Chinese peppermint plant. The Japanese plant differs slightly from the Chinese.

As the name *Mentha arvensis* var. *javanica* had, up to that time, been applied to two entirely different plants, Mr. Holmes desired to bring about their separation, and, in view of the difficulty of classifying the species of the genus *Mentha*, consulted eminent specialists. Their opinions differed considerably, but, on the suggestion of Mallinvaud, the name *Mentha arvensis* var. *piperascens* has been provisionally adopted. The last-mentioned adjective has been here and there copied erroneously as *purpuracens*. There are two varieties of the Japanese plant, one having purplish stem and leaves, while the other is green. In this it is analogous to the English plant, which also grows in two varieties, commonly designated as "black" and "white."

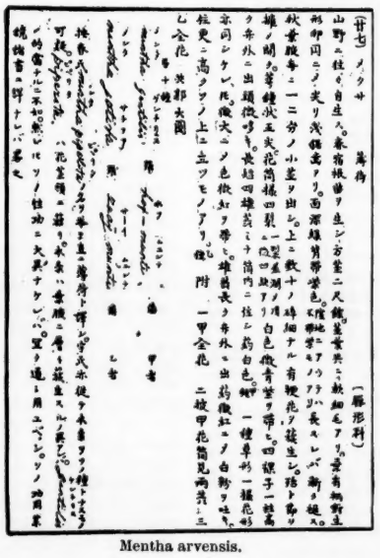
There are several Japanese works on botany which devote space to a

Mentha crispa (*Oranda Hakuku*).

Mentha arvensis (*Megusa*).



Mentha crispa.



Mentha arvensis.

description of the plant as it grows in Japan. Mr. Jackson and several other writers have already referred to some of them, but only cursorily. As there is but little known about these Japanese works among the English-speaking people, and, as we possess excellent editions of them, we present on page 101 facsimiles of two of the illustrations contained in the *So moku dzu setsu*, together with the original text and translation.

The facsimiles are reduced electrotypes of photographs made by ourselves.

The translation was made by a Japanese friend of Mr. Albert M. Todd, of Nottawa, Mich., namely, Mr. K. Tamari, of the Imperial University, Tokio, at present engaged in special studies at Lansing, Mich.

A few words regarding the work and its author may first prove of interest.

One of the foremost pupils of Dr. Siebold, during his residence in Japan (1822–29; 1859–62), was *Iinuma Yokussai* (or *Iinuma Chojun*), who afterwards began the publication of what was intended to be a complete Flora of Japan, with accurate illustrations, Japanese text, and scientific (Latin) equivalents. The title of the work is "So moku dzu setsu," and twenty books of it were issued in 1856, when the author unfortunately died. His son took up the uncompleted task, but was also soon afterwards carried off by death. The twenty parts issued comprise the first section, namely, all herbaceous plants (with exclusion of the grasses) both wild and cultivated, arranged according to Linné's system, and accompanied by 1,215 excellent drawings, made from nature, and giving every detail necessary for the diagnosis of the plants. In the text the Japanese name or names are supplemented by the Chinese equivalents, if such are known, also by the Latin names (in Roman characters), and by the Dutch equivalents, if any exist. Sometimes the work is incorrectly quoted under the title *Soo bokf*. The edition which we possess is the improved second one, published in 1874 by Tanaka Yosiwo. In this edition the posthumous labors of both authors, so far as they refer to the already published portion of the work, have been incorporated. Mr. Tanaka Yosiwo was assisted in the editing of the work by Ono Motoyoshi. Dr. Savatier, of Yokosha, undertook to control the correctness of the Latin names printed upon the plates. In the two plates reproduced above, the Latin and Japanese names have been transferred by us to the bottom, because the scientific name given on the plate of the Japanese peppermint plant was not correct. The name given on the original plate is *Mentha arvensis* var. *vulgaris* Benth., which belongs to a different species. The illustration, however, exactly represents the Japanese plant.

The work was to comprise altogether forty volumes. In addition to the twenty volumes issued, Iinuma Yokussai had completed the manuscript for ten additional volumes, and, in the preface of the second edition, we are promised their speedy publication. Up to the present time, however, we have heard nothing more of them.

So moku dzu setzu, vol. XI. [Plate 27], MEGUSA. *Mentha arvensis* L. [var. *vulgaris* Benth. This should now read: Var. *piperascens* Malinvaud].

Megusa. Hakuku. (var. A.), grows wild occasionally. Shoots out in in spring from its perennial roots. Stem square, two feet high; stalks and leaves downy; leaves opposite, petiolate, ovate but pointed, serrated; the upper surface deep green; under surface of a purplish color—in shady places, sometimes not purplish—which, when the plant is fully grown, looks faded. In the fall, many short branches come out at every node, which soon bear flower or spikes. The flower is bell-shaped, corolla toothed, white, with greenish-purple tint, containing four stamens and one projecting pistil.

Var. B. Habits and growth of this are the same as those above mentioned for var. A. It is a little larger, stamens and corolla of light reddish hue, holding white pollen dust on the reddish stalk; pistil still more projecting.

Var. A. Latin: *Mentha gentilis;* Dutch: *Hof-Munte.*

Var. B. Latin: *Mentha sativa;* Dutch: *Zaaymunte.*

Mentha piperita L. resembles hakuku, but the former has terminal flowers, while the present variety has axillary flowers. They have, however, the same merit [properties], so that the name may be applied to them both. . . .

In connection with the preceding, we also copy the next following plate, representing *Mentha crispa* L.

[Plate 28.]

ORANDA * HAKUKU. Labiatæ [Dutch or European Mentha].

Leaves not petiolated, heart-shaped, somewhat thick, deeply serrated, smooth but wrinkled by veins. Flowers on terminal spikes about one inch. Although the flower is like that of the native plant, "there is no identation on corolla," which is of a light reddish color; stamens inserted in corolla.

Latin name: *Mentha crispa;* Dutch: *Kruizemunt.*

Linné describes the stamens as being of the same length as the corolla, but the plate represents them longer. Regarding the present variety of mentha, Linné says that it seems to be superior in quality to Hofmunte (*M. arvensis*).

NOTE. We have given the translation verbatim, in order to show how the Japanese author has treated the subject.

Coca.†

(Continued from p. 88.)

Cultivation.

THE minute and laborious care which must be bestowed upon the cultivation of coca, under various local and climatic difficulties, induced already the Spanish conquerors to turn the work over to the natives. Even to-day, the ordinary labor connected with the industry is performed almost exclusively by the Indians. When a territory is to be devoted to this purpose, the virgin forest is cut down, the stumps burned, roots dug up, and the soil turned over. If the location is along a mountain side, small narrow terraces are formed, the number of which depends on the steepness of the declivity, in such a manner that the rain-water may easily drain off.

In order to render the soil compact, small stone walls are erected along each terrace. By means of a smooth iron, holes of about three inches square and six inches deep are dug, into which some seeds are placed, and the young plants afterwards transplanted into somewhat deeper holes dug in straight lines. Upon level ground, it is customary to make parallel furrows separated by small walls (*umechas*) constructed of loose stones, along the sides of which the young plants are arranged. The sowing takes place near the end of the dry season, between November and January.

The fully ripe, dark scarlet-red fruits, after being dried in the shade, are very carefully sorted, all damaged ones being thrown a side. This is done by throwing them into water, when the sound ones fall to the bottom, while the others float on top. The sound ones are kept under water until the flesh separates from the kernel.

According to Clerc, the sowing is done in large propagating inclosures, and the young plants protected by shrubs or mats. During the succeeding year, when the plants have attained a height of about one foot, they are transplanted into open fields, being set about six inches apart, in furrows of a depth of two feet, and about three feet distant from each other.

The final location of the shrubs requires the greatest care and attention, as upon this depends both the quality and the quantity of the future harvest. The soil around the separate plants must be constantly kept loose to permit the ready access of moisture, and during the dry season a regular system of artificial irrigation must be employed, care being taken that this is not carried too far, since this would render the shrub weak, the leaves light-colored, and cause them to assume a blackish color when dried. Besides, great attention must be paid to remove all weeds (*maleza, huriar*), as their presence not only injures the growth of the plants, but is also said to impair the flavor of the leaves.

While the plants are young, they are generally protected from the direct rays of the sun by mats or other contrivances. Sometimes Indian corn or manioc (*yuca*) is planted in the intervals of the furrows; occasionally the *cocales* are surrounced by coffee shrubs. It has been demonstrated by Bolognesi that the leaves of plants which have been thus protected are thin and tender, without having lost anything in flavor or taste, while those exposed to the sun are thick and brittle.

Under favorable circumstances the shrub grows rapidly, flowers soon, and will attain a height of about six feet. As it is considered injurious to the leaves to allow the shrub to exceed a certain size, it is periodically clipped so that it may not exceed about three feet. Those shrubs which are intended to be allowed to develop fruits and seeds, must not be deprived of their leaves.

Harvesting, Drying, Packing.

The period of harvest varies according to the quality of the soil. In the yungas of Bolivia, the first is collected twelve to eighteen months after transplantation. In Peru it is postponed to the fifth, in Vitoc to the third year. This first crop, though but scant, furnishes the best and most esteemed quality. The leaves are stouter, of a darker green color, but without any prominent taste, and are consumed on the spot where they are collected.

The subsequent harvests (*mitas*) take place at different times. The better the soil and the greater care is bestowed on the shrubs, the more frequently may they be repeated. According to Poeppig, there are plantations where leaves may be collected all the year round, as they do not all "ripen" at one time. Other observers say, every 2½, 3, 3½, or 4 months.

A short time (about 3 months, often earlier) after the first crop has been taken off, the shrub has regained its leaves. Then the second crop is collected, which is the most abundant, and occurs in March or commencement of April (*mita de Marzo*). A very scant crop is next obtained in June or beginning of July (*mita de San Juan*), and, finally, another in October or November (*mita de todos Santos*).

Only ripe leaves are taken, that is, those which are stiff and easily broken off. The size and color of the leaves are considered immaterial. Ripe leaves which are not plucked off usually drop of their own account just before the rainy season.

(Continued on p. 115.)

* NOTE.—The Japanese Oranda is the adjective of Holland.

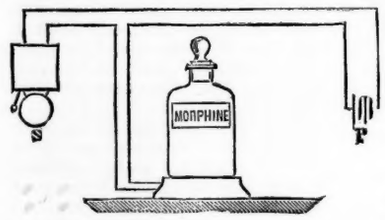
† Abstract of a pamphlet entitled: "Das Cocablatt. Eine pharmakognostische Abhandlung von Dr. Josef Nevinny, Assistent an der Lehrkanzel für Pharmakologie und Pharmakognosie an der K. K. Universität in Wien." 8vo, Wien, 1885. (With the sanction of the author.)

ALARM SIGNAL FOR POISON-BOTTLES.

A PROPOSITION has recently been made to introduce a system of warning by an electric bell whenever the poison closet is opened or a bottle removed from a stand, which communicates with the alarm bell. The apparatus devised by Schuch & Wiegel, of Berlin, for this purpose, is shown in the accompanying cut (after *Pharm. Zeit.*). It consists of the battery P, the contact plate on which the [morphine] bottle stands, and which is shown in detail in Fig. 2, and the bell. Whenever the bottle is removed from the stand, the light spring, which had been depressed by it, rises, and completes the electric circuit, causing the bell to ring.

This method is shown here, not because we believe it will be generally introduced, but to illustrate the simple manner in which such an apparatus can be constructed. As a method of giving warning to the prescription clerk that he is dealing with a dangerous article, it is bound to be a failure, inasmuch as it will take but a short time for customers to ascertain the meaning of the continual tingle—tingle, many of whom will be frightened at the large variety of "poisons" the young man behind the counter apparently has to handle.

We believe, however, that the principle may be applied in a different manner, namely, so that the dispenser be given an unmistakable warning without the attention of the customer being attracted. At a place in close



Alarm-signal for poison-bottles.

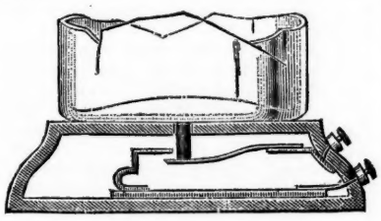
proximity to the prescription balance, and so situated that it must necessarily be seen, the electric current may cause to appear (by the circuit being opened or closed) some conspicuous danger-sign (a scarlet or brick-red disk, for instance), which will strike his eye when going to the balance to weigh out the article. Of course, provision would have to be made for causing the signal to disappear, either automatically or mechanically. And arrangements would have to be made in stores where more than one prescription balance is in use, and several poisonous articles are to be weighed out at the same time. All these difficulties could be overcome. We mention the above merely to show that electricity can be made useful in drug stores. Of course, there are many other ways in which the attention of the dispenser can be arrested besides electric signals.

A Simple Poison Guard.

SAMUEL CONSTABLE, writing to *The Lancet*, says: "Over the corks or stoppers of all the poisons put a closely-fitting capsule (it can be made of common strong paper), which must be removed before the cork or stopper, thus rendering two operations necessary before the drug can be dispensed."

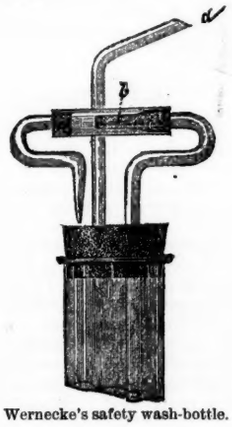
STILL another poison guard is suggested by the *Western Druggist*. A strip of steel may be firmly riveted over the mouth of the morphine bottle, the neck having been first plugged with a torpedo, so arranged as to explode and shatter the steel when the bottle is opened. If the clerk survive, he will know that the shock meant *morphine*.

Benzoin, nearly two hundred years old, and shipped by one of the vessels of the Dutch East India Company, in a vessel which was wrecked in Table Bay, has recently been recovered from the sea in quantity of over one ton. The cases in which it was packed bore the marks originally painted on them, as legibly as when new. One of the marks reads: A° ‖ 1691, showing that it was either shipped or packed in 1691.



AN IMPROVED WASH-BOTTLE.

SOMETIMES, when using washing-bottles, the operater is annoyed by the retrocession of the water in the exit-tube at the moment when blowing through the air-tube is interrupted. This may be prevented, according to M. Wernecke, by constructing the exit-tube in the manner shown in the cut. The main exit-tube is bent in form of an U, and the upper limb squarely cut off. Upon this is slipped a piece of rubber tubing closed at the other end with a piece of glass rod, and provided with a slit. A piece of glass tubing isslipped over the rubber connection, and in the outer orifice of this glass tubing the curved glass jet is fastened by means of a rubber cork. When air is forced into the flask by blowing into *a*, the water is forced through the slit *b*, and made to pass out through the pointed orifice. When the blowing is interrupted, the slit closes automatically, and any water present in the glass-tube in front of the slit will thereby be prevented from receding into the flask.—After *Chem. Zeit.*



Wernecke's safety wash-bottle.

Kelline.

MOUSTAPHA announces the discovery in *Ammi visnaga* a ternary substance having narcotic properties, and causing, in animals, vomiting, paraplegia, irregularity of the heart's action, and retarded respiration. The fruit has been used as the basis of a tonic and astringent gargle in ulceration of the mouth and gums. Decoction of the seeds, in daily doses of 150 grammes, has been used as a remedy for rheumatism. Ointment made of triturating kellah seeds with oil or fat has been used as an application for rheumatic joints. Decoction of 18 to 20 grammes of the seeds in 160 grammes of water is a reputed remedy for gravel, and the leaves have been used in the form of cataplasm.—*Lancet.*

[ORIGINAL COMMUNICATION.]

STOP-COCKS FOR PERCOLATORS

BY E. V. ZOELLER, OF TARBORO, N. C.

FOR some time past I have used a novel kind of stop-cock to control the flow of liquid from percolators, and have found it of great convenience and advantage. It is an article well-known to any pharmacist, yet I do not know that it has ever been suggested for this purpose before. It is simply a "sprinkler," or sprinkle-top stopper, of such size that it will fit into the orifice of the percolator. There are numerous styles of these "sprinklers," and it is perhaps immaterial which kind is used. Only, they should have a stem of proper diameter, adjusted to the size of the percolator, and should permit the liquid to pass at any rate of flow that may be desired, either in drops or in a stream. These "sprinklers" fit very nicely in the "Oldberg" pattern percolators.

In my judgment they are a great improvement over the rubber cork with glass-tube and rubber-tube attachment.

On the Best Vehicle for Salicylate of Sodium.

F. HELLWIG, apothecary at Baruth, Germany, some time ago sent a communication to the *Archiv d. Pharmacie* (vol. 224, 80) in which he relates his experience with vehicles for disguising the taste of salicylate of sodium. A lady had presented the following prescription:

℞ Sodii Salicylatis..... 20
Syr. Flor. Aurant..... 30
Aquæ destill.....250
M. S. A tablespoonful three or four times a day.

The prescriber appended a note, in which he directed the prescription to be often repeated, and the syrup to be changed from time to time. He also directed that the salicylate of sodium should be administered in wafers or other form, if the patient desired it.

The apothecary supplied, at first, a bottle of the mixture, also 10 Limousin capsules and 10 gelatin capsules, each of these containing 1 Gm. of the salt. After a while the lady asked to have the mixture repeated, complaining that the capsules, when they dissolved in the stomach, caused a disagreeable burning sensation to ascend from the stomach to the mouth. The apothecary, this time, prepared the mixture with syrup of orange peel, and ever afterwards the lady preferred this vehicle to any other. She also discovered by accident that the disagreeable sweet, mawkish after-taste caused by the remedy is best obliterated by a small dose of brandy containing common salt [presumably saturated with salt.—ED. AM. DR.], and the hot taste of the latter overcome by eating a piece of chocolate.

Mr. Hellwig, who is himself a victim of rheumatism and compelled to take the remedy, confirms the above from his personal experience.

Iodide of Potassium in Spasmodic Asthma.

DR. J. A. ORMEROD reports the result of using iodide of potassium in thirty-six cases of spasmodic asthma. The symptom most amenable to the remedy was the disposition to nocturnal recurrence of the attacks. This was very noticeable and the attacks returned when the remedy was stopped. Five or ten grains given three times daily suited best in most cases.—*The Practitioner*, Apl., '86.

NOTES ON PRACTICAL PHARMACY.*

PLASTERS.

PLASTERS, *emplastra*, differ from ointments only by being of a more viscous or harder consistence. Wax, resins, gum-resins, and balsams, and fats boiled with oxide of lead, [or rubber, or similar substances] are usually their chief ingredients.

Plasters are dispensed either in bulk or spread on calf-skin, linen or taffeta, and other materials.

CERATES, *cerata*, are likewise plasters, which are of a harder consistence than ointments and softer than plasters, although some compositions are called cerates which contain a good deal of wax, and are harder and more brittle than plasters.

SPREAD PLASTERS, *sparadrapa*, are woven materials, such as linen or taffeta, which are coated with a thin layer of plaster or some of the constituents of plasters. The latin name is formed from *spargere*, to spread, and the French *drap*, cloth.

The mode of preparation of plaster-mass and spread plasters, which are to be kept in stock, is a matter for the stock or manufacturing clerk (so-called *defectarius*). This being the case, only a few necessary directions will be here given for the preparation and spreading of such small quantities as the dispenser may be called upon to furnish.

The component parts of a plaster, following the rule which applies to all other mixtures, must be thoroughly mixed with one another so that a homogeneous mass may be obtained. Dry substances which do not become fluid at all, or do not liquefy at a temperature in which, for example, officinal lead plaster melts, such as leaves, barks, seeds, soaps, salts, Spanish flies, etc., should be pulverized or triturated to a fine powder before being mixed with the plaster-mass. This applies also to gum-resins, which are hard to melt or do not become entirely liquefied, such as *gamboge*, *myrrh*, *euphorbium*, and the resins such as *mastic*, *sandarac*, *benzoin*, *olibanum*, and *amber*.

Substances which, although hard, are easily melted, like *wax*, *spermaceti*, *resin*, *Burgundy pitch*, *paraffin*, *nutmeg butter*, *stearin*, *tallow*, etc., should be carefully melted, with continued stirring with a hot iron spatula, in a little pan provided with a handle, known as a PLASTER-PAN, or in an iron or brass plaster-mortar, the powdered and thoroughly mixed ingredients shaken into the melted mass, and incorporated with it by agitation. It is the more necessary to stir the melting substance when the operation is performed over an uncovered flame. As all fats, resins and plasters are poor conductors of heat, it may easily happen that they may ignite in some spots before the entire mass is melted. The use of great heat should be carefully avoided in all cases, and especially when aromatic substances enter into the composition of the plaster. All of the above-named substances except *resin* may be melted in a water-bath. If a steam apparatus for this purpose is at hand, its employment is preferable to the above.

The GUM RESINS, such as *ammoniac*, *galbanum*, *asafœtida*, *sagapenum*, when they form the foundation of a plaster (by themselves, or with turpentine or vinegar, as the prescription may require) should be heated until they assume the consistency of a liniment. If these gum-resins are only to be mixed with a small quantity of a plaster-mass, they are to be triturated to a fine powder and mixed with the partially cold plaster-mass while it is still fluid; the same course should be adopted with volatile substance like camphor, ethereal oils, or balsam of Peru. *Camphor* should first be triturated with a little fatty oil, or dissolved in one of the fluid constituents of the plaster.

If a melted plaster-mass requires the addition of EXTRACTS of a soft consistence, they must first be mixed alone in a plaster-mortar with about one-third of their weight of turpentine, and united with the half-cold plaster by stirring. DRY EXTRACTS which cannot be converted into an impalpable powder, must, in order to attain the same result, be dissolved in water [or diluted alcohol, or alcohol] so as to form a barely fluid paste and mixed with the before mentioned portion of turpentine.

If *Emplastrum* or *Unguentum Hydrargyri* is to be added to a melted plaster mass, the latter should be half cooled, and the use of a copper or brass mortar or plaster pan must be avoided, and a porcelain casserole employed.

Small Copper Plaster-pan with Iron Handle.

Little Brass Plaster-pan for the Steam Apparatus.

Plaster-mortar.

The STRAINING of plaster-masses (through linen or gauze) is to be avoided as far as possible. Therefore, only such ingredients should be used as do not require straining. If, however, this operation is necessary, it should be performed only while the mass is still hot and fluid, and before any of the powdered ingredients are added.

A piece of gauze is always to be preferred to a strainer, since it is less prone to absorb the plaster-mass.

MIXING OF PLASTERS WITHOUT MELTING.—Most of the officinal plasters which are kept in stock, and especially those in the form of rolls, are composed of materials of such consistence that they become soft by being slightly heated, and may then be mixed with each other by kneading, so that it is not necessary to melt them entirely. They may be softened by being placed in a mortar or a flat glass vessel and covered with hot water. The water should not be so hot that the finger cannot be held in it for a moment. It should be carefully noted, however, that the harder plasters and those which melt with more difficulty, must remain longer in the hot water than the softer ones.

If they should both be put into the hot water at the same time, the latter would melt and run together before the former became soft. The kneading of the plaster is done either with the moistened hands or by means of a slightly-heated and moistened pestle in a plaster-mortar, a little brass mortar of the form and size of a pill-mortar, which is fitted with a handle by means of an iron ring which encircles it. If powdered ingredients, which are not dusty, are to be added to the mixture, it may be done by kneading, the powder (camphor, for instance) being strewed on the surface of the plaster, which is spread out flat, and the plaster being then rolled up like a sheet of paper, the roll compressed and the kneading continued. This process can be used advantageously only with very small plaster-masses. The mixing would be more perfect if it were done in a plaster-mortar with a hot pestle. If soft EXTRACTS are to be added to the mass, the mortar and pestle should be slightly heated, and the extract first mixed with a portion of the soft plaster containing the wax, which enters into the mixture at the same time.

The thoroughly-mixed and homogeneous mass, when free from any nodules of plaster, is then poured into little plaster-pots, or flat paper capsules, or rolled out into a cylinder. The plaster should be poured into the little plaster-pots only when it is of too soft a consistence to be rolled into cylinders. If, however, it contains additions which the melted plaster does not hold in solution, it is allowed to become cold, stirring meanwhile, and dispensed in the manner that salves are.

Mixtures containing wax, such as *Ceratum Labiale*, *Ceratum Picis Burgundæ*, are to be poured into paper capsules. Whenever it is possible, the plaster is given a cylindrical shape by being taken out of the mortar when nearly cold, kneaded, and then, having been moistened with water to prevent its adhering, it is rolled into a cylinder on the plaster-board. Oil is used in rolling plasters only when the mass contains much of extracts that are soluble in water, or other organic powders or substances which are either easily soluble in water or readily part with their soluble constituents in its presence. The plaster is then enveloped in paraffin or wax paper, and dispensed in wrappers of smooth white or colored paper, marked with the proper label, or else in long pasteboard plaster-boxes. Lead plaster should never be rolled out with oil.

SPREADING PLASTERS.—The preparation of spread plasters requires skill and practice. Plasters are spread upon *linen*, *waxed linen*, *paper*, *paraffined paper*, *adhesive plaster*, *taffeta* or soft-tanned *sheep-skin* [also *plain muslin*, *twilled muslin*, *moleskin*, etc.]. The plaster should be spread on the rough side of the soft-tanned leather and not on the smooth or grain side. Plasters are usually spread about as thick as ordinary packing paper.

Emplastrum Cantharidis, *Hyoscyami*, *Conii*, *Belladonnæ*, and the like, are kneaded soft with the fingers, and then spread out by means of the moistened thumb of the hand, or the iron plaster-spatula on muslin or linen or leather, to the thickness of the back of a knife. A smooth upper surface may be given to the spread plaster by stroking and gently pressing it with a spatula that has been heated in the flame of alcohol.

PLASTERS SPRINKLED WITH CAMPHOR.

* The basis of this series of papers is the last edition of Hager's "Technik der Pharmaceutischen Receptur." The editors have, however, found it desirable to omit certain portions which relate to matters of practice peculiar to Germany and to insert others which are more characteristic of American customs. Editorial additions are inclosed in [ ].

The use of the original text has been kindly granted by Dr. Hager.

--If the physician wishes the spread plaster to be sprinkled with camphor, the spread plaster is turned about over the flame of a petroleum lamp, so that its outer surface is half melted, and the camphor, which has been triturated to a fine powder with the aid of a few drops of alcohol, is at once strewed over the plaster very thinly and evenly, by means of a little sieve, and a quarter of an hour later the layer of camphor is pressed down on the surface of the plaster with a cold spatula.

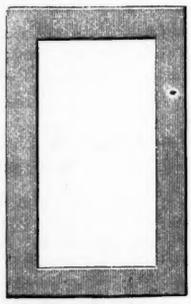
The process is similar when any other sprinkling powder is employed.

Other plasters, such as *Emplastrum Saponis*, *Plumbi*, *Hydrargyri*, and the like, are to be softened in hot water; *Ceratum Cetacei*, *Emplastrum Opii*, must be melted, applied with a hot plaster-spatula, and spread. Should the softened plaster be very adhesive, the spatula is moistened with water when the spreading is performed.

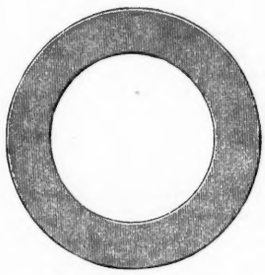
The plaster should not be applied too hot, as in that case it would permeate the fabric.

The plaster should never be spread over the entire surface of the cloth or leather, but its margin should be left uncovered for about $\frac{3}{8}$ or $\frac{1}{2}$ inch.

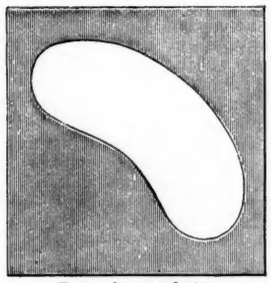
PLASTER-FRAMES or PLASTER-MOULDS. — By these terms we designate little round and four-cornered smooth frames of white metal. These frames are of no use in the preparation of large spread-plasters, but in making small ones, not only is the labor of spreading lessened by their use, but the plaster receives a smooth, sharp border and an attractive appearance, and the border of the cloth which has been left free is kept from being soiled. These little frames are kept in stock of sizes and shapes to correspond to the plasters that may be most in demand.



Quadrangular Plaster-Frame.



Round Plaster-Frame.



Frame for ear-plaster.

Plaster knife.

Plaster spreader.

Punch for Drouot's Ear Plaster.

If a plaster is to be surrounded with adhesive plaster, the plaster is either applied at once to spread adhesive plaster, leaving a margin of the latter about $\frac{1}{4}$ inch wide, or the adhesive plaster is rolled with moistened hands into long cylinders, of the thickness of pack-thread, which are laid around the border of the spread plaster, and pressed evenly with a moistened plaster spatula on to the spread plaster, and then flattened out. Ear plasters may be cut or punched out of the plaster by means of a punch or die, made of steel [or may be cut by hand].

PERFORATED or POROUS PLASTERS are new forms of spread plasters, provided with numerous small holes. Such plasters are intended to offer no impediment to the perspiration. The holes may be made by hand by means of a suitable apparatus, as described by Archer, *Amer. Journ. Pharm.*, Ser. 4, Vol. 30, p. 171. The holes are from 2 to 3 mm. wide.

The instrument used for perforation is a cylindrical brass roller, $\frac{3}{4}$ inch long and $\frac{5}{8}$ inch thick, which revolves on a steel axis set in a steel fork, with a wooden handle about 10 inches long. The roller is fitted with 16 hollow steel cones, which are set round in two alternate rows of $\frac{1}{2}$ inch each. Each cone is about $\frac{1}{4}$ inch long, with a small hollowed apex of half that length.

When the instrument is used, the handle is grasped in both hands, and the roller, being moistened with water,

Plaster perforator.

is passed over the plaster, which rests on a layer of soft paper, exercising moderate pressure. The pieces of the plaster which are cut out are pressed into the steel cones, and through them into the roller, whence they can be removed when necessary.

[It is safe to say that spreading the ordinary popular plasters, or the perforating ("porousing") of plasters is but rarely practised by the pharmacist. In fact, the art of spreading plasters has passed into the hands of the manufacturer, who, with superior apparatus and skill, can undoubtedly produce much more handsome and uniform plasters than any person could turn out by hand. The material forming the base of the plaster is like-

wise of superior quality, not equalled by any compound directed by any pharmacopœia. It is only when a plaster containing a definite amount of some active ingredient is wanted that the pharmacist, in this country, is likely to be called upon to prepare a plaster himself. Germany and other European countries are already following our example in this respect, though not to the same extent.]

ADHESIVE PLASTER. — When large quantities of sticking plasters have to be kept on hand, they are generally spread in extensive laboratories by means of special apparatus, but this does not preclude their preparation in pharmacies, and there are even many pharmaceutists who possess special skill in spreading them with a plaster knife. The PLASTER KNIFE is a knife with a wooden handle and an obtuse blade of elastic steel about 13 Cm. long, and thinner towards the point, which is blunt or rounded. The cloth to be covered with the plaster is laid on a pad of smooth paper, and the adhesive plaster having been partly melted in a mortar to the consistence of a soft mass, it is spread with the plaster knife, which has been slightly warmed in an alcohol flame or Bunsen burner. If a little trouble and skill are bestowed on this process, his mode of sparadraping can be accomplished without blemish.

Some pharmaceutists prefer to use the "plaster spreader" for spreading plasters, which is shown in the cut [and of which various forms are in use]. By its peculiar shape, when the blade, which is covered with plaster, is laid down, it does not soil whatever it may rest upon, the wooden handle being so broad and heavy that it keeps the blade tilted up. The blade is about $4\frac{1}{2}$ inches long, of elastic steel, which is somewhat thinned towards its rounded end.

BOUGIES.

BOUGIES are smooth and firm cylinders, conical at one end, about 6 to 12 inches long, made of linen, catgut, cotton thread in bunches (like the wicks of wax tapers), spread adhesive plaster, or rubber. They are of the thickness of a writing quill or a crow-quill. Linen bougies are made by cutting the linen into strips about 12 inches long and $1\frac{1}{2}$ to 2 inches wide, one edge being straight, and the other edge tapering to the point of the former in a curve. These strips are drawn through a mixture prepared from pure yellow wax, so that they are evenly saturated with it, and rolled on a marble slab, which is slightly heated, or on a hard, smooth, wooden board, beginning at the straight edge *a*, into FIRM cylinders, which are to be rolled several times in the same direction with a smooth piece of board, so as to make them as firm as possible. If they are not sufficiently smooth, or if the surface feels somewhat rough, they may be passed quickly through an alcohol flame [or Bunsen burner], care being had that the wax does not melt out from the linen.

LEAD BOUGIES are prepared by mixing 75 grains of acetate of lead with $3\frac{1}{2}$ ounces of yellow wax, in a porcelain evaporating dish, heating it until the wax melts, and completing the mixing with a heated pestle. The above-described strips of fine linen are

then to be saturated with this mixture, and then having been freed from the superfluous mass adhering to them by scraping with a strong knitting needle, rolled into bougies. The use of a fine knitting needle facilitates the turning over of the margin of the linen, and also the rolling of the bougies. This should be withdrawn as soon as the process is finished.

SIMPLE BOUGIES are prepared from a mixture of 3½ ounces yellow wax and 150 grains of olive oil, which mixture must be free from all moisture. The strips of linen, prepared as above described, are to be saturated with this mixture, laid on a heated glass plate, and a stout, hot knitting needle laid over them, between which and the glass disc they are to be drawn out so as to free them from any superfluous water, and then rolled up as before directed.

Bougies of catgut are prepared as follows: The catgut is extended between two hooks, and freed from fibres adhering to it, by rubbing with pumice and little linen rags, and then the heated wax mixture is painted on it by means of brushes. This is repeatedly applied to the stretched catgut which is kept in a perpendicular position, until it is covered with a layer of uniform thickness. Such uneven parts as appear may be scraped off with a penknife.

CANDLE WICKS, wound together, say in 2, 3, and 4 pieces, should be saturated, stretched out, and treated with wax in like manner.

These bougies having been supplanted by corresponding articles made of *vulcanized caoutchouc* are almost obsolete, and only rarely ordered by old surgeons. [On Raynal's bougies, see elsewhere in this number.]

(To be continued.)

Tests for the Purity of Cocaine.

AMONG the tests for the purity of cocaine hydrochlorate drawn up by the Pharmacopœia Committee of the German Pharmaceutical Association, there is the requirement that the salt should volatilize completely when heated on platinum foil, and dissolve clear and colorless in water and in concentrated sulphuric acid. In criticising this latter test, Mr. Beckurts points out (*Pharm. Centralhalle*, March 25th, p. 140) that although adherent extraneous impurities would be indicated by coloration in contact with the acid, this would not be the case with decomposition products of the alkaloid itself. Moreover, the coloration would sometimes depend upon the relative proportion of the salt dissolved in the acid. Giesel's test, dependent on the formation of a violet-red precipitate with solution of potassium permanganate, without the reduction of the permanganate, he considers to be open to the same objection, since the permanganate is not reduced directly by the decomposition products of the alkaloid. He would therefore require, in addition, that the salt should be perfectly neutral, so that a small quantity, placed on moistened blue litmus paper, should give no indication of acidity. The tests for purity of cocaine hydrochlorate, in Herr Beckurt's opinion, should be that it should dissolve clear and colorless in water, volatilize completely from platinum foil, give a colorless solution with pure concentrated sulphuric acid in the proportion of one centigramme to 0.5 C.c., and that a concentrated aqueous solution should be absolutely neutral, and not at once reduce potassium permangate, and when heated with an excess of this salt, give off no odor of oil of bitter almonds. As additional tets for the identification of cocaine, Herr Beckurts recommends to heat a little of the alkaloid with alcoholic potash, when the characteristic odor of benzoic ether should be given off, or the addition of a little perchloride of iron to a solution of the alkaloid in sulphuric acid, which should give rise to a yellow turbidity that disappears on warming.—*Pharm. Journ.*, May 1st.

[*Note.*—Mr. Beckurts' statement that permanganate of potassium is not reduced by the decomposition products of cocaine requires further proof; indeed, so far as we have practised the test, we think that it *is* reduced by them. But as we did not pay very special attention to the *cause* of the reduction, being satisfied with the *fact* that there was a reduction in one case and none in another, we must leave this point open for the present.—ED. AM. DRUGG.]

Cocaine known in 1857.

IT is generally supposed that Niemann, a German chemist, was the first to discover cocaine, having isolated it as early as 1859. Dr. Clemente Torretti, late professor of chemistry and pharmacology at the University of La Paz (Bolivia), now writes to a South American journal that he has found irrefutable proofs, showing that in 1857 a Mr. Enrique Pizzi, his (Dr. Torretti's) predecessor in La Paz, succeeded in isolating the alkaloid of the coca-leaf, having been encouraged to make experiments on the coca leaves by Mr. Tschudi, the celebrated Austrian explorer, and Dr. Aquila Ried, a well-known personage in Valparaiso. Dr. Torretti adds that his assertion is not founded on documentary evidence only, but that he has actually found specimens of the cocaine manufactured by Pizzi in 1857.—*Chem. and Drugg.*

The Removal of Tannin from Sherry and other Wines.

IT seems now to be an accepted fact that the cause of the precipitate in ipecacuanha wine [of the *Brit. Pharm.*, which is prepared by macerating powdered ipecac in acetic acid, percolating, evaporating percolate to dryness, and macerating the dry extract in sherry wine], is the tannin contained in the sherry. This had long been conjectured, but has not till lately received the prominence it deserved. Experience has clearly proved that ipecacuanha wine made by the new process does still deposit, unless the wine has previously been freed from tannin, and it is equally true that ipecacuanha wine keeps perfectly clear and bright for months, provided this precaution be carefully observed. The same line of remark holds true with reference to quinine wine. Some samples of this popular medicine invariably showed a muddy, unsightly deposit, whereas others remained comparatively clear, the difference being entirely due to the greater or less content of tannin in the orange wine. Some firms advertise orange wine "free from tannin," but I generally find that this statement has to be received as indicating what the wine ought to be, rather than what it is.

It may not, therefore, be out of place to give a method for the separation of the tannin from the wine, which is so simple that any pharmacist may carry it out. I have tried various plans, but the best is the expedient of putting a quantity of isinglass amongst the wine some time before it is required for use. The isinglass must not be in a state of solution, as it is impossible to get the compound that is formed coagulated without the addition of salts that would injuriously affect the wine, and, moreover, the solution has the effect of diluting the wine.

The isinglass must not be too fine or too coarse. In the first case, I find that a certain proportion of the isinglass seems to be dissolved by the wine before the tannin has had time to deposit, and, in the second, sufficient surface may not be obtained without the use of quite an unnecessary quantity of isinglass. After various trials, I find most satisfactory results are arrived at by using isinglass, such as Swinborne's "extra quality," which is neither very fine nor very coarse. The proportion employed is one ounce isinglass to half a gallon of sherry or orange wine, and my practice is to set aside this quantity immediately after a lot has been made, and by the time it is required, which may be in a few weeks, or sometimes days, as the case may be, the wine is so far free from tannin. It takes a long time to remove the last traces of tannin, and this, indeed, I have not been able to accomplish; but by the end of a month, the color of the tannate of isinglass (or "leather," as we might call it) is of a dark brown to a shade approaching black, according to the proportion, less or more, of tannin in the wine.

By the use of these detannated menstrua, ipecacuanha and quinine wines may both be prepared, with every confidence that the result will be satisfactory. Let me add that my opinion of the value of the new process for preparing the former has received ample confirmation, as may be gathered from the fact that five drops of wine, which was at least two months old, have had on more than one occasion a strong emetic effect even on adults.—THOMAS MABEN in *Chem. and Drugg.*

The Abuse of Phosphorus in Sel Medication.

WITHIN the past decade, the medicinal use of phosphorus by the public without proper medical advice has increased enormously, in spite of warnings as to the dangers attendant upon the continued use of this patent "enervator." At the last meeting of the Clinical Society of London (*British Medical Journal*, p. 545), Mr. Hutchinson read notes of a case which well illustrates the dangers of self-medication. An old lady (65) had for two years taken three of Kirby's one thirty-third grain phosphorus pills daily and and "quite renovated her brain thereby;" but meanwhile necrosis of the lower jaw set in to such an extent that "bare discolored bone was disclosed in the mouth the whole length of the alveolus." This necessitated the removal of four inches of dead bone. The patient made a good recovery. This is a wholesome warning to the phosphorus-taking public, and is a powerful argument in favor of the sale of such medicines by those only who are cognizant of their properties. —*Chem. and Drugg.*

Preparation of Pure Hydrobromic Acid.

PROF. J. S. STAS, being engaged in a new determination of the atomic weights of silver, potassium, and sodium, derived from their relations to bromine, required for this purpose a hydrobromic acid absolutely free from chlorine and iodine.

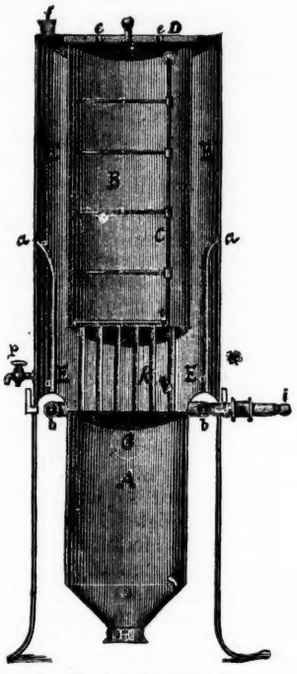
He first dissolved the bromine in bromide of potassium, added oxide of zinc to the solution and distilled the mixture. Any chlorine that may have been present in the bromine will remain behind as chloride of potassium, any iodine present will combine with the oxide of zinc, and pure bromine will distill over. Hydrobromic acid is then prepared from this in the usual manner, by acting with the bromine upon red phosphorus in the presence of water.—*Zeitsch. f. Anal Chem.*, 1886, 213.

Balsam of Copaiba is recently mentioned as an excellent application for burns.

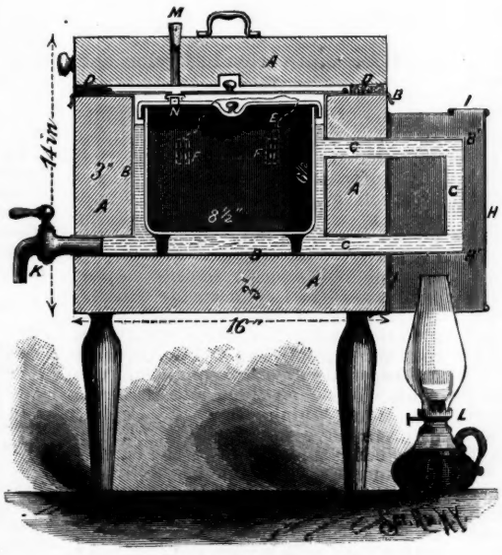
A NEW HOT-AIR DRYING OVEN.

For drying substances in a current of air, deprived of moisture, and at the temperature of boiling water, the apparatus here illustrated is recommended by Dr. Rud. Rempel. It has a height of 17¾ inches, and a diameter of 6 inches. It consists of a reservoir *A*, charged with lumps of chloride of calcium for drying the air passing through the apparatus. This reservoir is attached to a double-walled cylinder *E* containing water which is heated by a circular burner *b*. The air which ascends through the lower orifice *H* and the chloride of calcium, passes in a dry condition through the narrow tubes *k* into the interior of the drying oven, and finally escapes through openings in the top. The products of the combustion of the gas pass off through 4 equidistant channels *a*. The steam of the boiling water escapes at *f*, and the presence of water in the upper chamber may be ascertained by means of the stop-cock *p*.

[If this stop-cock were turned upwards, and connected with a glass tube open on top—the stop-cock being kept open all the time—the arrangement would serve as a water-gauge.—Ed. Am. Dr.] When the apparatus is started, the chamber *A* is charged with fused chloride of calcium, the rubber stopper at *H* is loosened sufficiently to permit the entrance of air and the gradual escape of the melted or liquefied chloride of calcium into a vessel placed below. If necessary, a fresh supply of chloride of calcium may be introduced through *G*. The interior of the drying oven contains a framework of shelves which may be lifted out. When the substances to be dried, which are best contained in watch-glasses of about 2½ inches diameter, are thoroughly dry, the whole frame is lifted out, the watch-glasses transferred to a desiccator, and afterwards weighed between ground watch glasses or other contrivances that will prevent the access of moisture.—After *Chem. Zeit.*



Rempel's drying oven.



Atkinson's oven.

Francisceine.

Franciscein is the name proposed for an alkaloid recently discoved in the manaca root of Brazil (*Franciscea uniflora*) and other species. It is powerfully purgative and diuretic and also has diaphoretic and emmenagogue properties.—*Lancet.*

Olea Cocta.

The so-called *infused oils* of the German and other continental pharmacopœias are usually directed to be prepared by macerating the cut herb (hyoscyamus, stramonium, etc.) with alcohol, and then digesting with olive oil. Eugen Dieterich recommends an improvement, by employing the herb in a powdered condition. This enables the operator to confine the vegetable substance to a smaller space, and to extract it with the oil in two separate portions, whereby a much deeper colored product is obtained.

Oleum Hyoscyami

is directed to be prepared as follows:

Hyoscyamus, powdered...	100 parts.
Alcohol	75 "
Olive Oil	1,000 "

Mix the hyoscyamus with the alcohol, introduce the damp mixture into a stone-vessel of suitable capacity, close it, and set it aside for twenty-four hours. Then add 600 parts of olive oil, digest, under frequent agitation, during ten to twelve hours, at a temperature of 60°–70° C. (140°–158° F.), and express strongly. To the residue add 400 parts of olive oil, digest in the same manner, express, and add to the first portion.

The yield amounts to about 920 parts.

[Note of Ed. Am. Dr.—Infused oils have been repeatedly examined for the quantity of active constituents they contain, though at no time with any degree of accuracy (compare Dragendorff, "Die chemische Werthbestimmung einiger starkwirkender Droguen." 8vo, St. Petersburg, 1874, p. 35). But with the improved methods of separation of alkaloids at present available, a much more accurate estimate of their therapeutic value might be obtained. It is suggested that some one select this subject as a theme for investigation.]

Spanish Pharmacy is reported to be on the downward path. Spanish pharmaceutical papers complain bitterly of hard times among the trade. Shop after shop is being closed, and in some houses the receipts have fallen to one-fourth of what they were a short time ago. The decline in legitimate pharmacy is ascribed principally to the establishment of military pharmacies, and to the increase of quackery and the sale of nostrums.

A USEFUL OVEN.

The *Scientific American* describes a simple and inexpensive contrivance invented by Mr. Edward Atkinson, and called the "Aladdin Cooker," which is recommended for the cooking of food, but which might be made of much use in a pharmaceutical laboratory as a drying oven or hot chamber. By adding salt to the water a higher degree of heat might be attained than when simple water is used. The description given is as follows:

A, box of pine wood, 1½ to 3 inches thick, according to size of cooker; B, lining of tin or tinned copper, fitted with arm B′ of copper, through which the water, D, circulates, and in which it is heated by the lamp, L; the cooking vessel, which may be of metal, preferably of porcelain or of glass; D, D, felt lining to cover; E, cord attached to perforated ears or ring, F, F; G, G, G, G, water in circulation, heated by lamp, L, to about 200° F.; H, hood of tin about the arm B′ to concentrate the heat upon it; I, nut to tin hood for draught; J, tin guard to keep heat from wood; K, faucet for drawing off water; L, lamp with wick ½ to 1 inch wide, according to size of cooker; M, orifice for thermometer; N, orifice to cooking vessel with screw cap, for thermometer; B′B′, arm 3 inches by 1 inch deep. Rounded corners are desirable inside for facilitating cleanliness. Begin with tepid or cold water, if glass vessels are made use of.

Atropinum Santonicum.

A compound of atropine and santonic acid is recommended by Herr Bombelon (*Pharm. Zeitung*, April 14th, p. 280) as presenting advantages over any other salt of atropine for ophthalmic purposes, a solution of it being perfectly non-irritating, and not liable to fungoid growth. The action is said to be mild and resemble that of homatropine. The mydriatic action equals that of atropine sulphate; one drop of a solution of 0.01 gramme in 20 grammes of water is sufficient to dilate the pupil, the dilatation disappearing in from twelve to twenty-four hours. Atropinum santonicum is described as a white, amorphous, non-hygroscopic powder. A dilute solution may be prepared with cold water; a stronger solution requires the aid of a little heat. It is recommended that the solution be preserved in yellow-glass bottles, to avoid the formation of photosantonic acid under the influence of light, though it is not yet known whether this change would be prejudicial.—*Pharm. Journ.*

[We do not yet know whether the compound above spoken of is the santonate or the santoninate of atropine, the two acids, santonic and santoninic, being different in properties.—Ed. Am. Drugg.]

Terebene.—As to the value of terebene, there is a remarkable and amusing testimony, communicated to the *Brit. Med. Journal* by Dr. Calvin G. Campbell. He had recommended it as a *disinfectant*, and got the following letter from the patient's sister shortly after:

"Don't you think that you should have cautioned my parents as to the increase in their butcher's bill when you told us to try terebene? My sister took double the quantity of food. Nurse said: 'Since you have used that stuff, I eat as much at one meal as I used to eat in a day, and quite enjoy it.' It must have some magical effect."—*Chem. and Drugg.*

The Government Plantations in British India.

IT had been announced by the British Government some years ago that it was not its intention to keep up the cultivation of cinchona trees longer than was necessary to firmly establish the industry, so that it might thereafter be left in private hands. As there was no evidence that the Government made any preparations to abandon the enterprise or to contract the area of Government plantations, Mr. L. McIver, of the British House of Commons, recently asked Government whether any steps had been taken to abandon the enterprise to private industry.

To this inquiry the following answer was made by Mr. U. Kay-Shuttleworth, the Under Secretary of State for India:

I can answer my honored friend's questions, only reminding him that the Duke of Argyll, in a dispatch to the Government of Madras of the same date as that which he quotes, wrote: "It is clearly necessary that the Government should retain the plantations in their own hands for the present. The time has not, therefore, arrived for finally deciding upon the question of their retention or eventual sale. As at present informed, however, I incline to the opinion that a portion of the plantations, with the manufactory, should remain permanently under Government superintendence." Though it has never been the intention of the Indian Government to continue permanently in the bark trade, the time for withdrawing from it has been deferred during scientific investigations on the subject of the production of a cheap febrifuge.—*Chem. and Drugg.*

Commercial Sulphate of Quinine.

IN our last issue (page 91), we gave an account of the results obtained by Prof. E. de Vrij, in his examination of commercial sulphate of quinine, nearly all of which he found largely contaminated with cinchonidine. At the same time, we gave an abstract of Mr. Cownley's criticisms, which appeared to contradict de Vrij's results in many respects.

Dr. de Vrij has, since then, replied to these criticisms in a paper published in the *Chem. and Drugg.* of May 1st. In this, he points out that, according to experiments formerly published by him, Hesse's test—upon which the results of other experimenters was based—did not suffice to prove the absence of cinchonidine, unless the reacting liquids were left in contact for a much longer time than two hours. We published this test and criticisms, made by various experimenters at that time (NEW REM., 1879, 139, 179, etc.). We will only briefly repeat the outlines of Hesse's process here:

"Introduce 0.5 Gm. of sulphate of quinine into a test-tube containing 10 C.c. of hot water (between 122° and 140° F.), and shake well repeatedly. After the lapse of ten minutes, filter the cooled liquid into a special tube [called "quinometer," about $\frac{7}{16}$ inch in diameter and about 5 inches long; having two graduation marks, the lower one corresponding to 5 C.c., and the next one to an additional C.c.] until the filtrate reaches the first mark (at 5 C.c.). Then add 1 C.c. of ether, and finally 5 drops of water of ammonia. Close the quinometer with a cork, shake gently a few times, and set it aside for *two hours*. At the end of this time, the ethereal solution floating on top must be found free from crystals when examined with a loupe."

De Vrij showed afterwards, that when the tubes were set aside for twelve or fourteen days, even such samples as had appeared to be perfectly pure under Hesse's original test, showed a copious separation of crystals, due to cinchonidine chiefly.

Partly basing on this modified method of Hesse, and upon other processes of separation (as tartrate), as well as upon the optical behavior of the samples examined, he now publishes a new series of results which would seem to justify him in adhering to his former statements.

He examined 2 new samples of English manufacture, 2 Dutch, 5 German, and 3 French samples. Unfortunately, he appeared not to have had any American samples at his disposal; hence we have no chance to make any comparison as to their constitution — when tested *by the same methods*. The results are as follows:

	Sulphate quinine.	Sulphate cinchonidine.	Water of crystallization.	Total.
English, I.....	84.769	9.508	5.723	100.
II.....	82.208	6.942	10.850	"
Dutch, I	77.931	8.355	13.714	"
II.*.....	87.575	0.000	12.425	"
German, I.....	77.428	4.730	17.842	"
II.....	78.932	5.730	15.338	"
III	78 617	5.676	15.707	"
IV.....	76.666	8.180	15.154	"
V.....	80.758	6.816	12.426	"
French, I.....	82.597	5.954	11.449	"
II	76.282	9.072	14.646	"
III....	73.790	12.448	13.762	"

The new statements published by Dr. de Vrij will undoubtedly lead to a further discussion of the merits of the several processes. It would be highly desirable that the examination should be extended—by all experimenters—to every brand of sulphate of quinine manufactured in Europe and in this country.

Cinchona Cultivation in Ceylon and Java.

THE cultivation of cinchona in India and Ceylon has led to such considerable changes in the bark market that any information bearing upon the prospects of the new sources of supply has an especial interest at the present time. A late number of the *Ceylon Observer* publishes a report of the opinions formed in this respect with regard to Ceylon by Mr. Mundt, the president of the Java Planters' Association, who has been making a tour through Ceylon and India, with the especial object of comparing the work carried on there and in Java. Mr. Mundt thinks that the Ceylon planters have not mastered the requirements and habits of the cinchonas, and he says that he has seen very little that is really well planted, everything being done with the idea of getting returns as quickly as possible, rather than with a view to permanent results. He thinks that though the elevation of most Ceylon estates is too great for Ledgeriana, a bastard of this variety, a hybrid of it and the succirubra, should do well on good ground, but not on the deep slopes now planted with officinalis and succirubra. In his opinion a very large proportion of the cinchona planted on the higher estates will die out in the course of a few years, since the ground is too steep and the soil not sufficiently deep. The conditions in Java are considered to be more favorable as regards future prospects. No bark is there taken until the trees are seven years old, and the system of grafting true ledger on succirubra stems is found to be very successful. There is a very large extent of ground planted with cinchona capable of yielding bark with ten and eleven per cent of quinine sulphate, and Mr. Mundt thinks that when this comes into the market Ceylon planters will suffer. There are few estates in Java where they have begun to shave the trees, nearly all the bark sent away hitherto being from from coppiced trees, and he anticipates that when the Java planters begin to shave, they will put on the market millions of pounds of bark far richer in quinine than can be produced in Ceylon. On the other hand, the absence of roads and railways in Java places that island at a disadvantage as compared with Ceylon, where the development of an extended railway system has provided great facilities for the transport of produce. In other respects the possibilities of extending the cultivation of cinchona in Java appear, however, to be very considerable, and Mr. Mundt speaks of millions of acres that would be available for that purpose if there were roads and railways in the district and the rate of transport was less exorbitant than it is; on this point he thinks Java can well take a lesson from Ceylon. But it must be remembered that there is another point also to be considered, namely, the market to be obtained for the bark, and in regard to this the editor of the *Ceylon Observer* expresses his opinion that the cultivation of cinchona on half a million acres would have the effect of swamping the world and ruining the enterprise.—*Pharm. Journ.*, May 1st.

* This exceptionally pure sulphate of quinine was prepared, at Dr. de Vrij's request, at the Amsterdam Quinine Works, from the bisulphate. Bisulphate of quinine is always free from cinchonidine; hence when an absolutely pure quinine salt is needed, either medicinally, or to prepare pure quinine and quinine sulphate from, the bisulphate should be chosen.

Arekaine.

AREKAINE, reported to be a constituent of betel-nut, is a colorless, volatile oily alkaloid, smelling like weak meat broth, and having a strong alkaline reaction, resembles nicotine. It causes increased salivation, retards the pulse and causes purgation.

Thalline.

DR. BRITNEFF experimented with thalline in 15 cases of pneumonia, tuberculosis, and typhus, and found that, although it is an active antipyretic, its effects are of short duration, the temperature rising soon with vigor.—*Lancet.*

Lanolin.

THE following tests for the purity of lanolin are given by Dr. Oscar Liebreich:

1. A small quantity, on being heated in water over a water-bath, must show the absence of glycerin.

2. If a solution of caustic soda be added, ammonia must not be developed.

3. If a small amount be heated with water on a water-bath, the fat must separate in oily drops without producing an emulsion. If the quantity employed be large, it must separate as a clear oil.

4. With litmus-paper the reaction must not be acid.

5. When well mixed with water upon a ground-glass plate with an iron spatula, the product must contain over 100% of water and the mass be sticky and paste-like, adhering to the spatula; if impure, the mass will have a soap-like smoothness from which the spatula readily glides.

6. On exposure, the surface of lanolin and lanolin-salves become darkened, owing to escape of water and not to decomposition.

7. It never becomes rancid and its odor should remind one of wool.—*Br. Med. Jour.*

ADAMS' PAPER COILS.

SOME time ago, a new method of estimating water and fat in milk was published by Adams, and this has been found so reliable and practical that it is at present in extensive use. Since it is applicable, not only to milk, but to many other determinations where a certain constituent of a mixture has to be extracted with a volatile solvent, it deserves to become more generally known. Its chief feature is a small coil of narrow, rather stout filtering-paper, completely deprived of any substance soluble in moderately dilute acids, as well as of all traces of fat. A sample of the milk to be tested is poured on the upper edge of the coil, and the weight of the latter, in a dry condition, having previously been ascertained, it is only necessary to dry it to a constant weight, in order to find the percentage of water. By extracting it then with ether, and again weighing, the loss will indicate the amount of fat.

Although the process has not been very long in use, it has found so many supporters that it may be considered as being firmly established. It was not to be expected, however, that it was not capable of improvement, and the following abstract of a paper (in *The Analyst*, April, 1886) by A. H. Allen and W. Chattaway points out how such improvement can be made:

The authors say:

"We roll up with the paper a piece of string previously boiled with water containing a little sodium carbonate (in order to remove size, etc.), which serves to keep the concentric folds of the coil from contact with each other. We also tie on to the lower end of the coil a piece of filter-paper about 3½ inches in diameter. This is made of thinner paper than the coil itself, and is pleated round the sides of the coil, somewhat after the manner in which a dispenser fold the cap of the cork of a bottle of medicine. This device provides the coil with a bottom, and enables us to deliver 5 C.c. of milk as fast as it will run from the measuring pipette on to the upper end of the coil, which should, meanwhile, be suspended from a suitable support. In this manner the necessity of weighing the milk absorbed by the coil is wholly avoided.

As the novelty attaching to our mode of operating really lies in the construction of the paper coil, it is desirable to describe the method of making it in more detail.

The strip of paper we employ is of the same dimensions and quality as that used by Mr. Adams; but each concentric ring of paper in the coil is kept equidistant from the next by means of a piece of string, which is threaded down either side of the paper, about half an inch from the edge, as shown in the accompanying sketch. It will be seen that there is a loop, formed by knotting the doubled string, which loop protrudes from the centre of the coil when finished, and is useful for hanging it up while being charged with milk, and during the subsequent process of drying.

A small glass rod (or other suitable article) is used to roll the paper upon, the rolling being commenced at the loop-end of the strip. When the coil has been rolled as far as the last holes in the paper (BB), the two ends of the string are tied in a knot as close to the paper as possible. A hole is then made through the centre of the paper, immediately under the knot, and of sufficient size to allow the knot to go through. The winding of the remaining three inches of the paper is then completed, and a pleated cap of filtering paper placed over the bottom of the coil. A hole is made through this cap at the side, just where the knot occurs. The ends of the string are threaded through this hole, and the cap and coil are then secured by merely tying the two ends of the string round the cap. The finished coil has a diameter of ⅞ inch, and can then be extracted with ether in the usual way, to remove traces of resin, etc.

The advantages we claim for the coils made in the foregoing manner, specimens of which we produce, are as follows:

The concentric folds of paper being kept separate by the string, the full extent of surface is exposed, and the process of drying is correspondingly facilitated.

The cap of filter paper at the bottom, aided by the obstruction produced by the string, renders it possible to pour the milk at once on to the open end of the coil while it is suspended by the loop of string.

No loss by filtration of the milk through the cap has ever occurred to us. This fact enables us to dispense with the two weighings which militate so powerfully against the general adoption of the original mode of operation. With the modified coils, 5 C.c. of the milk can be taken up in a pipette and at once run on to the suspended coil. The density having been previously observed, the weight employed is, of course, accurately known.

Although in general, and when operating on fresh milk, we consider the

FIG. 1.

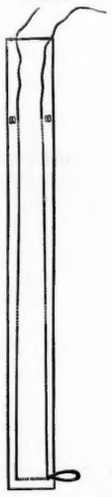


FIG. 2.

Adams' paper coil.

use of a definite measure of the sample has marked advantages, the use of a known weight of milk is equally simple.

The amount to be taken can be weighed in a tared tub or small beaker, poured on to the coil, and the vessel rinsed out with a few drops of water, which, in their turn, are added to the coil. The last plan is equally available for sour milk, a weighed quantity of which may at once be poured on the centre of the coil—the modified plan having a marked advantage in this respect over the coil as originally constructed. If it be considered desirable to employ ammonia, its addition to the weighed quantity of milk, before pouring on to the coil, presents no difficulty.

A number of coils being charged with milk, they can be conveniently hung on rows of pins in a vertical Stone's box, or similar receptacle, and can be kept there for an indefinite period.

Lobeline.

DR. V. ROSEN recognizes two alkaloids in *Lobelia nicotianæfolia*, one liquid, corresponding to the lobeline obtained from *L. inflata*, the other solid, crystalline, and soluble in chloroform. The second has also been discovered in *L. inflata*. The solid alkaloid and the hydrochlorate and sulphate of lobeline, correspond in their pharmacological chararteristics and resemble apomorphia in their power to cause vomiting.—*Lancet.*

PROTECTION FOR FLASKS DURING HEATING.

DR. F. W. DAFERT recommends to use a small, disc-shaped frame of wire-gauze as a protection to flasks which are to be heated over a naked flame, and which contain liquids which are liable to bump and thereby cause the flask to break when it is set on the iron ring of the retort stand

direct. The frame consists merely of a ring of wire-gauze set on edge upon the retort-ring, and fastened there by wire. This wire-cylinder serves also as a useful protection against moderate drafts that might affect the flame burning under the flask.—*Chem. Zeit.*

Helenin.

HELENIN is recommended by Dr. J. B. Obiol as a local application in diphtheria. When pure, it should be perfectly white and flocculent, like the sulphate of quinine, with aromatic odor and bitter aromatic taste; insoluble in water (to which it should impart no opalescence); very soluble in alcohol and especially soluble in ether, the solutions being clear, colorless, and without sediment. 2% is soluble in oil of sweet almonds. Impure specimens are apt to be granular, heavy, yellowish, only slightly bitter, with resinous odor, and they sometimes render water opalescent and deposit a precipitate from solutions in alcohol or ether. Another substance sometimes sold for helenin, said to be a derivative of shalin, and not possessed of the antiseptic properties of helenin, is crystalline; only slightly soluble in alcohol or ether, and not at all in oil of sweet almonds.

Obiol first applies powdered camphor with the end of a finger to the diphtheritic process and then paints the surface with a solution of helenin in almond oil. This is at first repeated every four hours and quickly destroys the false membrane. It can be given internally in doses of 1½ grains to children six years of age. The remedy sometimes causes constipation.—*Lancet*, Apl. 10th.

Poisoning by Vaseline.

AN English physician reports in the *British Medical Journal* two cases in which symptoms of poisoning followed the administration of half-teaspoonfuls of vaseline on sugar as a remedy for sore throat.

In a subsequent number of the same journal, another physician narrates his experience in the administration of vaseline in large doses to cholera patients in India, and expresses an opinion that it produced no effect whatever —either good or bad.

Benzoate of Sodium is recommended by Sulman and Berry as preferable to other food perservatives, owing to the fact that it is tasteless when pure; is a third more powerful than boric acid, and is innocuous when taken in small quantities for prolonged periods. —*Lancet*, Apl. 10th.

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EDITORIAL.

THE April number of *The Druggists' Circular* stated that Drs. A. L. Loomis and F. R. S. Drake recently "instituted actions for $10,000 damages against C. N. Crittenton, as the agent for Kaskine," for libel in circulating the pamphlet advertisement of that nostrum, containing the allegations that they had reported favorably on its medicinal effects. Mr. Crittenton was made defendant because, while for circulating the libel, he was equally liable at law with the originators of it, he seemed to be, at the date the actions were commenced, the only person able to respond in damages. Efforts of attorney of the plaintiffs to find the "Kaskine Company" had been ineffectual, and it was presumed that Mr. Crittenton was not only the agent of the nostrum, but also its principal owner. A letter written to him by Dr. Loomis having failed to reach him personally, the actions were begun. Upon learning the actual state of affairs, in that both Drs. Loomis and Drake positively denied the truth of the statements of the pamphlet as to themselves, Mr. Crittenton signified his regret that statements circulated, without suspicion, by his house in ordinary course of business, like many other advertisements, should have placed him in the position of one circulating a libel, and upon his assurance that he had no interest in Kaskine beyond commission in sales, that the contents of the advertisement had never been brought to his personal knowledge, and that the circulars should be destroyed and no more of like nature distributed by his house, both the plaintiffs discontinued, on the payments of costs, actions which they had commenced, not on account of any personal rancor toward Mr. Crittenton, but for the sake of vindicating their professional reputations.

It is understood that the present head of the Kaskine Company has assumed his position, and indeed that the Company has been incorporated since the circular containing the misstatements as to Drs. Loomis and Drake were printed, and that the corporation has not circulated, up to the present time, any advertisements containing the names of these gentlemen. The prompt disavowal of Mr. Crittenton, on learning of the libellous nature of the advertisement, was felt by the plaintiffs to be all that could be reasonably asked of him, although they were advised that, technically, his ignorance or knowledge of the acts of his agents did not free him from legal responsibility, while it enabled them to show the falsity of the libellous statements in an action against a defendant of business standing and ability to respond in costs and damages. By instituting proceedings against such a defendant they vindicated themselves and signified their readiness to disprove in it the allegations of the owners of Kaskine, but they felt it would not be equitable, in view of the gentlemanly and reasonable explanation of his position, to subject Mr. C. to the large expense of defending the actions.

In this condition, the matter rests for the present. It is of interest to druggists as pointing out a liability that may be innocently incurred where, even without the knowledge of a proprietor, his agents circulate papers containing misstatements of a nature, if true, to injure in professional reputation the persons about whom they are made; and there can be little doubt, in view of the system of ethics adopted by all physicians, that to charge reputable physicians with recommending to the public proprietary remedies constitutes, if the charge be false, a libel in an action founded on which special damages need not be proved.

IT is known to those who have practical experience in the manufacture of cocaine that different lots of coca contain different *relative* percentages of the crystallizable alkaloid cocaine and of an amorphous alkaloid accompanying the former. There are even some lots of coca in which the latter is entirely absent. Now it would be an interesting problem to discover the relationship existing between the crystalline and the amorphous alkaloid; also, whether the latter is a separate individual or a mixture of several, and whether it is naturally existing in the leaf, or a product due to the process of manufacture. The fact that there are two varieties of cocaine—one crystallizable, the other amorphous (assuming, for the present, that this is merely a variety of cocaine)—has been recognized for some time, but no special attention was drawn to the difference between the two, until Giesel's test was published (see our last, and the previous number).

There is no doubt whatever that a pure crystallized cocaine, or any of its salts, is only very slowly affected by permanganate of potassium, no other alkaloid showing the same behavior. On the other hand, the amorphous cocaine reduces the permanganate more or less rapidly. Here our present knowledge ceases, for we know practically nothing as yet about the nature of this "amorphous base." Whether it bears the same relation to cocaine as the amorphous and "inverted" alkaloids in cinchona bark do to the crystallizable ones, or as hyoscine does to hyoscyamine, etc., is a question to be decided hereafter. For the present we are interested only so far as the therapeutic effects of the two varieties of cocaine are concerned. And here we must state that we have not yet learned of any observed differences. Probably the most competent observers, and those who used cocaine and its salts most frequently, never knew that there were modifications of the alkaloid, and therefore paid no particular attention to the *kind* of cocaine they used. It is possible that a difference in potency or in kind of action will hereafter be observed, but so far we do not remember having heard of any that could be ascribed to the fact that there is a crystallizable and an amorphous base.

While the permanganate test, therefore, enables us to prove the freedom of a sample of cocaine from the amorphous bases, it does not follow, *eo ipso*, that the samples which did not stand the test were less effective, physiologically or therapeutically, than the crystalline. It will, however, be conceded that when we have the choice of two varieties of a substance—of about equal activity—and one of them can be obtained in a crystalline condition, while the other cannot, that it is the wiser plan to select the former as giving more guaranties for its purity.

The crystallized hydrochlorate of cocaine, $C_{17}H_{21}NO_4.HCl.2H_2O = 375.4$ contains 9.59 per cent of water of crystallization, when crystallized from an aqueous solution. It forms anhydrous crystals, as we learn from a recent European report, when crystallized from alcohol. The new British Pharmacopœia gives the formula of the salt without the water of crystallization, and therefore conveyed the impression that it required the salt to be furnished in an anhydrous condition. In fact, Howard and others were in the habit of supplying it anhydrous, though they also made the crystals. Now if a cocaine salt, which has crystallized with water, is dried and rendered anhydrous, it will be practically the same thing as the same salt crystallized anhydrous from alcohol (supposing this were possible in every case). Such a desiccated crystallized salt has been in considerable demand, because it has been regarded by many

as a more definite and uniform starting-point for making solutions of a known strength, than a crystalline salt in which the water of crystallization might vary from various causes.

When cocaine was first introduced, it was an unfortunate choice to select the hydrochlorate as the soluble salt to be put into the hands of the profession. Had the hydrobromate been selected, it would have been far preferable, since this salt crystallizes with the greatest ease, and often in very long crystals. The kind of acid combined with the cocaine, in the small quantity used at any one time, is entirely immaterial, as it is not likely to modify the effect of the base in the least.

We have before spoken of the value that hydrochlorate of cocaine has as a preventive of seasickness, and now add that a phamaceutist of our acquaintance who suffers from nausea and giddiness whenever he makes a journey by railroad, has found that his trouble is entirely avoided when he takes one-tenth of a grain about every two hours during a journey.

The number of persons who suffer in this way is quite considerable, and the remedy is well worth a trial.

According to Dr. Paul and Mr. Gerrard, the enigmatical *hopeine*, which has puzzled the pharmaceutical, medical, and chemical world lately, is a mixture of morphine and cocaine.

Prof. Asa Gray, who had been applied to for information on American wild hops, and had been requested to obtain a sufficient quantity so that a thorough chemical study of its constituents could be made, sent the following letter to the *Pharm. Journal*:

"There is hardly a doubt that all the hops raised in North America are originally from plants introduced from Europe. If these will answer the purpose, it would be easy to have a sufficient quantity of American-grown hops sent to London; still easier to obtain them in the London market. But if hops from the native *Humulus Lupulus* are desired, this will not be easy. They grow, indeed, in a scattered way along the banks of certain streams, from Canada West to New Mexico, probably also in Arizona, but, if there, certainly in the secluded mountains only, and being dicecious, they can only now and then be found in fruit. I have myself seen the plant growing wild, but never in such a way that I could have gathered a pound of dried hops.

"If Messrs. Christy & Co. think such a sample would be of use, I will ask some of our Western botanists to look after it next summer. If it be true that the hop yields an alkaloid analogous to morphia, it is a most unexpected discovery."

The last number of the *Berichte der Deutsch. Chem. Ges.* (No. 6, of 1886), just received, contains the report of Prof. Ladenburg, of Kiel, on the chemistry of "hopeine." Samples of this substance, such as it had been furnished to E. Merck, of Darmstadt, by the London Concentrated Produce Company, were found to agree in every respect, chemically and optically, with morphine. Its ultimate analysis yielded figures which agree with those of morphine, but not with those of Williamson's hopeine.

In our April number, page 70, we also gave the percentage composition of the two alkaloids side by side, but the formula for morphine was erroneously quoted with O_4, instead of O_3, the correct figure.

This apparently settles the case of hopeine. But Dr. W. Williamson had isolated [or perhaps only pretended to have isolated?] some of this hopeine from American wild hops, and himself supplied Dr. Ladenburg with a quantity of 0.47 Gm. or not quite 8 grains, which insignificant quantity is in harsh contrast to the large amounts professedly available to the Concentrated Produce Company. Prof. Ladenburg, on examining this sample obtained from Dr. Williamson himself, one of the reputed "discoverers" of hopeine, found it to consist of *morphine* mixed with another alkaloid of greater solubility, the further investigation of which Prof. Ladenburg "naturally leaves to Dr. Williamson."

From other sources we have learned, since then, that this other alkaloid is cocaine.

The following report of the Senate Committee on Military Affairs, submitted on the 8th of February last, has not been acted upon, as yet, owing to the prolonged discussions which have occurred upon "burning questions" of more political importance. It may well be hoped that it will be reached at some time before Congress adjourns. The bill does not seem to us to meet the just demands of the class for whom legislation is asked, either as regards the amount of pay allowed to the rank conferred, but it is a slight improvement in the first particular, and if the matter is kept before the attention of Congress, it is probable that something better may be obtained hereafter.

The Committee on Military Affairs, to whom was referred the bill (S. 1,119) to provide for the appointment of hospital stewards in the United States Army, and to fix their pay and allowance, have duly considered the same, and submit the following report:

This bill creates two classes of hospital stewards in the Army and fixes their pay and allowance. It provides that the first class shall be composed of those appointed by the Secretary of War and permanently attached to the Medical Department, as now provided by law, who shall be entitled to $40 per month, the number of this class to be determined by the Secretary of War, and examination as to fitness and the recommendation of the Surgeon-General to be prerequisite to an appointment to this class.

The second class is to be composed of those appointed by the written order of a commanding officer upon the recommendation of a medical officer, the pay of the class to be $30 per month, and in addition to the monthly pay of either class they are to be entitled to receive the increase pay for continuous service now allowed by law, the allowance for fuel, clothing, rations, quarters, etc., to be as now or as may hereafter be fixed by law or regulation.

Substantially the same bill was introduced in the House at the first session of the Forty-seventh Congress, and it secured a favorable report (No. 1,405) from the Military Affairs Committee of that body, which the report states had already been recommended by the Surgeon-General.

The report of the Surgeon-General for 1884 invites the attention of the Secretary of War to "the urgent claims of the hospital stewards of the Army to be placed, as regards pay and allowances, in a position commensurate with the important nature of their duties."

In the opinion of the Surgeon-General the services of hospital stewards "may be rendered more efficient and valuable if the qualifications requisite to constitute trustworthy and intelligent non-commissioned officers are more substantially recognized." The bill introduced appears to be a draft of the one recommended by the Surgeon-General in his report for 1884.

Hospital stewards are called upon to perform peculiar duties, professional in their character, and of a varied and important nature, involving efficiency, reliability, and competency. The post surgeon is often absent or sick, and the medical duties of the post at such times devolve upon the hospital steward, who is required to be an experienced apothecary or druggist, possessed of practical knowledge of applying leeches, bandages, dressing wounds, caring for the sick, and preparing food, in addition to the performance of other arduous labor. The hospital steward must be a good clerk, an efficient druggist, a thorough nurse, a good dentist, and a practical cook—five important occupations combined in one man, which would seem to call for compensation equal, at least, to that received by the subordinates of the other staff officers, and approximating that of Navy apothecaries, whose duties are identical with hospital stewards, and who receive $60 per month for work less arduous than that performed by hospital stewards.

In view of these facts and the repeated recommendations of the Surgeon-General, your committee report the bill (S. 1,119) back, amended by striking out the word "fifty" in line two of section two, and inserting in place thereof the word "forty," and in line three of the same section strike out the word "twenty-five" and insert in place thereof the word "thirty," and as thus amended your committee respectfully recommend the passage of the bill.

To amend chapter five hundred and two of the laws of eighteen hundred and seventy-nine, entitled "An act governing the sale of drugs and poisons in the county of Kings, state of New York." *

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section first, chapter five hundred and two of the laws of eighteen hundred and seventy-nine, is hereby amended so as to read as follows:

§ 1. It shall be unlawful from and after the first day of October, one thousand eight hundred and seventy-nine, for any person, unless a registered pharmacist, within the meaning of this act, to open or conduct any pharmacy or store for retailing, dispensing or compounding medicines or poisons, or for any one not a registered pharmacist, *or registered assistant pharmacist*, to prepare physicians' prescriptions, except under the *immediate* supervision

* Introduced by Mr. Longley—read twice and referred to the committee on public health—reported favorably from said committee and by unanimous consent ordered to a third reading and printed.—Passed by default of Governor.—Assembly Bill No. 520.

of a registered pharmacist, *or registered assistant pharmacist*, in the county of Kings.

§ 2. Section second is hereby amended so as to read as follows:

§ 2. Any person, in order to be registered, shall be either a graduate in pharmacy, a graduate in medicine, or a licentiate in pharmacy, *or shall have passed a satisfactory examination before the board of pharmacy of the county of Kings, and received from them a certificate of qualification for either that of pharmacist, which shall entitle the person to act as principal, or that of assistant pharmacist, which shall only entitle the person to compound medicines and physicians' prescriptions, and dispense drugs, medicines and poisons under the direction of a registered pharmacist. Licentiates of other boards of pharmacy, or legally constituted pharmaceutical bodies, may be registered by the board of pharmacy of the county of Kings, if said board deem such action proper.*

§ 3. Section third is hereby amended so as to read as follows:

§ 3. Graduates of pharmacy and graduates of medicine, under the requirements of this act, must have had at least four years' *practical* experience in stores where precriptions of medical practitioners have been compounded, and have obtained a diploma from some legally constituted college of pharmacy or medicine. Licentiates in pharmacy must have had *before examination* four years' practical experience in stores where prescriptions of medical practitioners have been prepared, and shall have passed a *satisfactory* examination before the board of pharmacy of the county of Kings, or before any other board of pharmacy *or legally constituted pharmaceutical body recognized by the board of pharmacy of the county of Kings.*

§ 4. Section four is hereby amended so as to read as follows:

§ 4. The board of pharmacy of the county of Kings shall consist of five members, two of whom shall be pharmacists qualified for registration as aforesaid, to be elected by the Kings County Pharmaceutical Society, at a special meeting to be called for the purpose, within two weeks after the passage of this act; two practitioners of medicine to be elected by the medical society of the county of Kings, at its next stated meeting after the passage of this act, and a pharmacist, who shall also be a secretary of the board, to be elected by the joint ballot of the members elected as herein provided for. *Such officer shall be elected triennially thereafter in a similar manner.* The members of the board shall within thirty days after their election as aforesaid, individually take and subscribe before the clerk of the county of Kings an oath faithfully and impartially to discharge the duties prescribed for them by this act. They shall hold office for the term of three years, and until their successors are duly elected and qualified, and in case of vacancy, it shall be filled in manner herein provided, *to wit: within ninety days of its occurrence the body which elected the person whose place is to be filled shall elect his successor at a meeting, the purport of which due notice shall be given.*

The board shall organize by the election of a president to serve for the full term. The board shall meet at least once every three months, and three members shall constitute a quorum. The duties of the board shall be to examine and register pharmacists *and assistant pharmacists* in the regular order of their application, to transact all business pertaining to the legal regulation of the practice of pharmacy in said county, and to examine into and adjudicate upon all cases of alleged abuse, fraud, malpractice, or incompetence, *to make such rules and regulations not inconsistent with the laws of this state, as it may find necessary to carry into effect the provisions of this act*, and it shall be competent for the said board, by a vote of three-fifths of its members, to suspend or revoke the registration of any practising pharmacist, *or assistant pharmacist*, after due notice and trial before said board. It shall be the duty of all persons not exempt therefrom by the provisions of this act to appear and apply for examination within ninety days after the organization of the board. And any person so applying shall furnish to the board satisfactory evidence that he has had at least four years' experience in the compounding of physicians' prescriptions and in the general duties of pharmacy, and shall pay to the secretary of the board a fee of five dollars. And should he pass such examination satisfactorily, he shall be furnished with a certificate as to his competency and qualifications, signed by the members of the board of pharmacy, which certificate shall be his warrant for registration. *All persons registered by this board shall, upon payment of the prescribed fee, receive from this board a certificate of registration, and such certificate of registration shall be conspicuously displayed in the store or place where the person holding the same is engaged.* In case of failure to pass a satisfactory examination, he shall be granted a second examination without the payment of further fee; *provided he present himself for re-examination within six months.*

§ 5. Section nine is hereby amended so as to read as follows:

§ 9. Any person who shall attempt to procure registration for himself, or for any other person under this act, by making or causing to be made any false representation, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be liable to a penalty not exceeding five hundred dollars. Any registered pharmacist who shall permit the compounding and dispensing of prescriptions of medical practitioners in his store or place of business, by any person or persons not registered except under the *immediate* supervision of a registered pharmacist, *or registered assistant pharmacist*, or any person not registered who shall keep open shop for the retailing or dispensing of medicines or poisons, *or any person not registered who sells, compounds or dispenses drugs, medicines, or poisons, or prepares physicians' prescriptions, except under the immediate supervision of a registered pharmacist or registered assistant pharmacist*, or any person who shall fraudulently represent himself to be registered, or any registered pharmacist or dealer in medicine who shall fail to comply with the regulations and provisions of this act, in relation to retailing and dispensing of poisons, shall, for every such offense, be deemed guilty of a misdemeanor, and upon conviction thereof be liable to a penalty not exceeding five hundred dollars.

§ 6. *All previous acts and parts of acts relating to the practice of pharmacy or the sale of medicines or poisons in the county of Kings, inconsistent or conflicting with this act, or the act hereby amended, are hereby repealed.*

§ 7. *This act shall take effect immediately.*

A REWARD of 5,000 rupees [equivalent, at the present rate of exchange, to about 375 pounds sterling] has been offered by the Government of India for the discovery of any process that will render *salt* unfit for human consumption, while still leaving it fit for use for cattle, as manure, or for industrial purposes. A collection of papers on the subject can be obtained on application at the Revenue Department of the India office, St. James Park, London, S. W. (*Chem. and Drugg.*)

THE Senate of France offers a prize of from 25,000 to 50,000 francs for the discovery of the best practical method for ascertaining the toxic principles and impurities to be found in "vinic" alcohol.

THE *Union Pharmaceutique* states that, in a perfectly serious advertisement, a French oyster dealer offers for sale both ferruginous oysters and tar oysters.

MR. WALTER H. DODD, L.R.C.P., expresses, in a letter to the *British Medical Journal*, his surprise at the result of an attempt to make terebene by shaking together one part of sulphuric acid and five parts of turpentine in a closely corked bottle. He did not succeed in producing terebene, but he made a first-class explosion, and was relieved of any economical scruples respecting the quality of the clothing he wore.

A SERIES of experiments by Sir W. Roberts on the influence of food-accessories on digestion is reported in the *Nineteenth Century*. One of the most unexpected results of these experiments was the discovery that beef-tea has a powerful retarding effect on stomach digestion, as much so as a 5% infusion of tea. Further researches appear to show that this retarding effect of beef-tea is due to the salts of the organic acids contained in it. Beef-tea contains but very little nutritive properties, and must be looked upon rather as a stimulant than as a nutrient; but it is nevertheless very valuable as such.

Preservation of Salicylate of Sodium.

IF salicylate of sodium is exposed, for some time, to the light, in a white glass, the exposed portion will acquire a darker color in four to six weeks. At the same time it will have lost its faintly acid reaction, and will yield a colored solution. On the other hand, the portion which had not been exposed will have remained unaltered, produce a colorless solution, and have a slight acid reaction.

This is the experience reported by different observers, and has recently been again pointed out by a correspondent of the *Pharm. Centralhalle.*

It appears, therefore, that salicylate of sodium should be protected from light. And as it is hygroscopic, it should also be protected against dampness.

Reaction of Chlorate of Potassium with Chloral.

WHEN 165 grammes of chloral hydrate and 37.43 grammes of potassium chlorate are finely powdered and exposed to direct sunlight in a flask fitted with a reflux condenser, a reaction soon begins with great rise of temperature, and the flask must be cooled by immersion in cold water. Chlorine, phosgene gas, carbonic anhydride, and chloroform are given off. In four days the reaction is complete, and a separation of crystals takes place which may be increased by surrounding the flask with ice. The whole is then filtered and washed with absolute alcohol. Water is added to the alcoholic solution, which then yields on evaporation very pure hydrogen potassium trichloracetate. A small quantity of perchlorethane is also formed in the reaction.—*Ber. D. Ch. Ges.*, 18, 3336, *and Pharm. Journ.*

A GERMAN linguistic purist, who objects to the name "Apotheker" as being of foreign origin, suggests that it be replaced by the following title, which expresses the functions of an apothecary in a brief and concise manner: "*Gesundheitswiederherstellungsmittelzusammenmischungskundiger.*"

Semi-Annual Report on Drugs and Chemicals.

(From Gehe & Co.'s Trade Circular for April, 1886.)

Acetone, which is used in the manufacture of chloroform and iodoform, has advanced about 25%.

Aconitine.—In a previous issue, we have quoted an abstract from a paper by Buntzen and Madsen on the aconitines of the market, in which the crystalline aconitine of Gehe & Co. was reported to be the most active preparation now on the market, even exceeding that prepared by Duquesnel's process.

Gehe & Co. have been asked to communicate their process of manufacture to the International Pharmacopœia Committee, but it appears from what they say in their Trade Circular that they are not willing to give every detail of it, which is to be regretted, as the knowledge of the process would, perhaps, help to throw a better light on the whole chemistry of aconite. Gehe & Co. express themselves as follows:

"We have already, on a previous occasion, made the public announcement that our process is mainly based on that of Duquesnel, with this difference, that we use *oxalic* instead of *tartaric* acid in the first extraction. Nevertheless, the saying 'si duo faciunt idem, non est idem' is particularly true in the case of the manufacture of aconitine. The cause of difference lies in the different observation of the necessary precautions. The chief conditions for obtaining a satisfactory product are, avoidance of any temperature over 78° C. (172.4° F.) when distilling off the alcohol, and over 50° C. (122° F.) when working with aqueous liquids; also avoidance of any excess of acids or bases. To carry this out, it is necessary to employ the most perfect technical means, that is, the vacuum process at every stage of the operation. But such apparatus has, up to the present, not been an obligatory utensil in the laboratories of pharmacists, and it is for the latter that the process is to be given" [in the International Pharmacopœia. These last words we supplement ourselves, as they were evidently intended. We desire to say, however, that it is by no means the object of this or any other Pharmacopœia Committee to introduce a process of this kind into the pharmacopœia for the purpose of having every pharmacist prepare the article himself, but as a means of *helping to give a precise definition of the kind of alkaloid* which it is intended to make officinal. As long as it is impossible to give unmistakable and sharp differences between the different aconitines, as obtained by different processes, so that each could be clearly distinguished by tests from the other, it will be absolutely necessary to know the exact process by which it is obtained. In such a powerful drug as *aconitine* (or for that matter, others, like digitaline, curarine, etc.), it is not enough to know or to designate the name of the manufacturer ("Merck," "Gehe & Co.," "Duquesnel," "Nativelle," etc.) behind the name of the article. The physician, as well as the pharmacist, should be given every chance to control the identity of the substance, as the name of the maker (no matter how great his present reputation may be) is not an infallible guaranty that the quality or strength of the article will always continue to be the same in the future].

Adonidine, used as a substitute of digitaline, and reported to be much more prompt in its action, has been much used in spite of its high price.

Agaric of the Larch.—Only a moderate supply reached Hamburg last year from Russia, and the price advanced considerably. [In this country it is scarcely at all used, except, perhaps, as an ingredient in Warburg's Tincture.]

Agaricin, the active principle extracted from the preceding, and which is in reality an acid (agaric acid), has been in increased demand, being one of the most effective remedies, either alone or in conjunction with atropine, to stop the exhausting perspiration of consumptives and other abnormal sweats. Gehe & Co. say that the dose should begin at 0.005 Gm., or about $\frac{1}{12}$ grain, and should not be carried higher than 0.015 Gm., or $\frac{1}{4}$ grain. [This is correct, but it should be added that a dose even considerably above $\frac{1}{4}$ grain is not poisonous, but merely less effective for the purpose for which it is given. Compare our last number. Any agaricin, however, which is not deprived of the red resin, and therefore has not a pure white color, must be used with some caution, as the red resin is a powerful cathartic.]

Aluminium Metal.—The reduction of metallic magnesium to one-fifth of its previous price promises to be followed by a similar reduction in the price of *this* metal. Its wide applicability is, perhaps, not even appreciated. Among other practical uses, it is likely to be employed for coining; in fact, the proposition has already been made in Germany to supplant all nickel currency by one made of 100 parts of aluminium and 5 of silver. This alloy is entirely white, does not oxidize in the air, and has a brilliant lustre.

Antipyrin may now be considered as one of the staple remedies. Gehe & Co. have previously reported its consumption, compared with that of quinine, to be in the proportion as 1 to 5, and they still maintain that this is correct. [This may be true of Germany or the continent of Europe, but it is an exaggerated proportion so far as this country is concerned, though very considerable quantities are consumed here.]

Araroba has been in active demand, both in the form of Goa powder and for the preparation of chrysarobin. It is the general experience of all who have to handle this drug, that every person who is compelled to be near it when it is run through a mill or sifting apparatus suffers from inflammation of the conjunctiva for two or three days. On the other hand, the supposed active principle of Goa powder, namely, chrysarobin, does not, by any means, affect the eyes in the same severe manner; and it is only in very sensitive persons that it exhibits such effects. It seems, therefore, that *chrysarobin* is not the real active principle of araroba. Dr. Lesser has experimented with the mother-liquid, left behind when araroba is extracted by boiling benzol, and the chrysarobin has crystallized out. On evaporating the mother-liquor, he obtained an amorphous substance, which was found to be much more active, dermatologically, than chrysarobin.

Belladonna Root.—Gehe & Co. state that they found it difficult to procure the Hungarian Belladonna root necessary for their atropine manufacture. Japanese Belladonna root (from Scopolia japonica) is also in the market. This contains two alkaloids, *rotoine* and *scopoline*, of which the latter is sometimes asked for.

Bismuth.—The steadiness in the price of this metal appears to prove that the new Australian production, regarding the extent of which no reliable information can be obtained, has been pooled with the Bolivian and Saxon output.

Bismuth Peptonate, a new compound (of doubtful vitality, in our opinion), is prepared so as to contain 3% of oxide of bismuth.

Borax.—The great fall in the price of this article in Germany and other continental countries is due to the large extension of borax manufacture in Hamburg, from the crude borate of calcium imported from Chili. The *boraric acid* of Tuscany, which is the source of borax for the English and French manufacturers, has, in consequence of this, also been reduced in price, and borax has even been commenced to be manufactured in Tuscany itself. California borax has ceased to have any importance for the European market.

Boric Acid.—This acid is now used in considerable quantities, in Norway, as a preservative substance for fish (herring). Powdered boric acid is mixed with salt, in the proportion of 2 parts of the former to 1 part of the latter. The fresh herrings are packed in casks or kegs precisely like salt-herrings, and each layer is sprinkled with the salt mixture. When the cask is full, and has been made tight, it is filled with a solution of pure boric acid. For a keg of herring 2½ lbs. of boric acid and 5 lbs. of salt are required as material for sprinkling between the layers, and about 10 ounces of boric acid for making the brine. The cost of pickling 800 to 1,000 herrings is only about 75 cents per cask or keg.

Caffeine has found increased consumption, and is lower in price than before, although the material from which it is prepared is more expensive. Good tea is dear, and inferior tea does not pay the cost of working. It is, therefore, important that, besides the four different former sources of caffeine—viz., coffee with about 1 per cent, maté with ½ per cent, tea with 1, 2 or more per cent, and guarana with 5 or more per cent—there is now a fifth one available, namely, the kola-nut, which contains, besides theobromine, about 3 per cent of caffeine, which is very easily extracted.

Calabar Beans have become scarce, since large quantities are consumed in the manufacture of physostigmine.

Cardamoms.—The large arrivals of cardamoms, particularly from Ceylon, which produces now not only the "long cardamom," but also large quantities of the short Malabar variety, had the effect of depressing the price, so that it was at the end of the year 1885 only about half of what it had been in the beginning of 1884.

Carnauba Wax.—The importation of this Brazilian product at Hamburg has been 400,000 lbs. during the last year, against only 50,000 lbs. during the preceding year.

Chloroform.—As is well known, the new process of manufacturing chloroform consists in the substitution of acetone for alcohol, only 7 parts of the former being required in place of 11 parts of alcohol. Nevertheless, the old process (with alcohol) is still followed, as the price of alcohol [in Germany there is no duty collected on alcohol used for manufacturing purposes, where the alcohol does not enter, as such, into the product] is so low that it does not pay to use acetone. [The same is the case in England at the present time.]

Chrysarobin.—Regarding the diminished therapeutic efficacy of this remedy, and its probable cause, see Araroba.

Cinchona Bark has experienced a series of fluctuations which have not been felt by the general pharmaceutical public so much as by the manufacturers of quinine. After the price, per *unit*, had fallen in June to 4–4¾ pence, it rose in July to 5 or 6*d*, chiefly in consequence of heavy purchases of American manufacturers, who tried to force up the price of the bark, while they kept the price of quinine at almost the same level, their object being to prevent the importation of European quinine. Further, subsequent large purchases raised the unit to 7, 8, and even 8¼ pence. The consequence of this was that immense quantities of Ceylon bark were thrown upon the market, not less than 4,552,121 lbs. being delivered in London in the last

three months of 1885, against 1,890,781 lbs. and 1,643,124 lbs. in the corresponding months of the preceding two years. Up to February 15th of the present year, the shipments of Ceylon bark amount to 5,753,368 lbs., against 3,731,762 in the same period of the preceding year. Nevertheless, every consignment found ready purchasers. Although it has repeatedly been stated that the bad financial results of cinchona plantations in Ceylon would result in a great contraction of this enterprise, yet every year brings larger quantities of the bark. Hence it appears that no great reliance can be placed on these rumors. Increased shipments of superior bark have also been made from other directions, particularly from Java. Colombia is also expected again to furnish larger quantities, both of naturally-grown and of cultivated Calisaya bark, satisfactory specimens of the latter having already reached the London market.

Cornutine—a principle extracted from ergot by Dr. Kobert (AM. DRUG., 1885, 25) has been in some demand. [No further positive reports as to its therapeutic effects have come to our knowledge.] It has the remarkable property (which it shares with Tanret's *ergotinine*) that it is rendered deep sky-blue by sulphuric acid.

Coto Bark.—The true Coto bark is no longer obtainable, according to the assurance of the present importer. The para-coto bark, however, is still available in sufficient quantity.

Cubebs.—Gehe & Co. believe that the so-called false cubebs which have made their appearance upon the market, and about which a good deal has lately been written, are probably nothing else but unripe cubebs collected in different states of development. In the previous report (see AM. DRUG., 1885, p. 212) it was stated that when genuine cubebs are ground in a mortar with concentrated sulphuric acid, they acquire a carmine color, while spurious cubebs take a reddish-brown to browish-red tint. [We added the remark at that time that this reaction, as a means of distinguishing between the different kinds of cubebs, needed confirmation.] Gehe & Co. now state that the reaction depends upon the amount of *cubebin* present. This is contained in the inner portion of the fruit, and is more abundant in unripe than in ripe fruit. The riper the seeds become, the more does the cubebin appear to diminish, while the amount of starch increases. Hence very ripe, though genuine cubebs will probably not give the reaction at all. A decoction of cubebs will always turn blue with tincture of iodine, as the fruit always contain more or less starch. Unripe fruit, however, will be colored less intensely, as they contain a smaller amount.

The consumption of cubebs appears to be constantly on the increase. Nothing reliable, however, can be learned about the expected crop. The quality of the drug leaves much to be desired.

Coca Leaves have been, for a year past, an important article, particularly for Hamburg, where the imports of the three kinds now distinguished in the market—viz., Bolivian, Peruvian (Lima), and Truxillo leaves—concentrate themselves. The Truxillo leaves have a handsome color, but are usually badly broken up, and are not liked by manufacturers of cocaine. New York imported during 1885, 285,000 lbs. of coca, of which 225,000 lbs. were consumed.

Cocaine.—Messrs. Gehe & Co. only confirm what is well known from other sources, namely, that the good effects produced by cocaine in curing the morphine habit are counterbalanced by the fact that *cocamania* very often takes the place of *morphiomania*.

Codeine is gradually declining. Heretofore there was a regular see-saw between the price of morphine and codeine, either the one or the other being temporarily the most valuable, while the other almost sank to the position of a by-product. At present, the relation is quite anomalous. With the falling of the price of codeine, morphine has not only not advanced, but has even receded in price likewise.

Ergotinine.—Its reaction with sulphuric acid (deep sky-blue color) has been mentioned under *cornutine*.

Extracts, Fluid.—It is remarkable that Gehe & Co., Merck, and many other prominent houses appear to know only a limited number of the fluid extracts prepared in this country, while the most important ones they seem to be ignorant of. Their knowledge of the whole subject seems to be still fragmentary, and even the names of some of the drugs are given incorrectly.

Extracts, "Pasteurized."—Gehe & Co. make a remarkable statement. They make the announcement that the process of "Pasteurizing" has been employed by them from the very beginning of their manufacture of solid extracts, in this way, that the liquid extract obtained by exhausting the drugs at a low temperature was rapidly heated to 100° C. (212° F.), with exposure to air, and afterwards evacuated in vacuo. This process insured in most cases the stability and keeping qualities of the product. [Of course, the heat employed causes the coagulation of pectin bodies and other substances which are usually the cause of fungoid growth or fermentative processes. It is a question, however, whether certain drugs containing delicate alkaloids, such as belladonna, aconite, digitalis, etc., will stand this process without some loss of active material. In this country we avoid the use of heat as much as possible, and endeavor to exclude the mucilaginous and pectin-like bodies by selecting a menstruum which will leave them behind as much as possible, while it will extract the active principles.]

Guarana arrives only occasionally, and in small lots. It is not likely that it will be cheaper during the present year.

Gum Arabic.—The best medicinal varieties have become quite scarce and dear. While 855 seroons were in first hands in Trieste at the beginning of 1885, only 8 seroons were reported to be on hand in January, 1886.

All sorts of East Indian and other varieties of gums, which were thought to be serviceable as a substitute for gum arabic, have been thrown on the market, though only the easily soluble kinds found purchasers.

Gum Senegal has also correspondingly increased in price.

Hippuric Acid.—This acid was in active demand, not only in the free state, but also in its combination with lithium, sodium, and calcium. It is highly extolled by French physicians as a solvent of urates in articular rheumatism.

Iceland Moss.—The collection of Iceland moss in the Riesengebirge (mountain chain between Bohemia and Silesia) has been forbidden, or at least restricted, to prevent damage to the forests.

Ichthyol.—This name is now applied by Gehe & Co. to the ammonium salt ("sulpho-ichthyolate of ammonium") of the orginal acid substance, introduced as ichthyol. For some time past, they prepared the latter as a sodium salt, and also called it ichthyol. It has been ascertained that the ammonium salt is preferable.

Kamala has been scarce and of very poor condition. It has been impossible to obtain any that would come up to the pharmacopœial requirements (Pharm. Germ., 6% of ash; the U. S. Ph. allows 8%, but we have reason to know that even this is far from being attainable).

Kefyr.—The demand for this Caucasian milk-ferment has increased. The best quality, known as "Bulgarsky," is not always attainable: hence other sorts have to be often used, which are, however, also of good quality, for instance that known as Chulamsky.

Kola Nuts.—Heretofore these nuts were obtainable in London only as a curiosity or in small lots. A consignment of them is expected to arrive shortly at Hamburg. It is already well known that these "nuts" combine the properties of tea and cacao, and are likely to form an important article of African export in the future.

Lithium Carbonate.—The preparation of lithium salts from lepidolite, which contains silicate of lithium and aluminium, is a difficult operation, which is the reason that but few chemical works undertake the manufacture. In Germany there is only *one* locality where the mineral is mined; but this does not furnish enough, particularly as only a tolerably pure mineral pays working. Hence outside localities had to be drawn upon, particularly a a mine in Moravia, which has entailed considerable expense. At present, the most generally demanded salt, namely, the carbonate of lithium, cannot be obtained in sufficient quantities at all, and higher prices must certainly be expected (indeed, they have already commenced).

Lycopodium is quite scarce, and stocks are likely to be exhausted towards the end of summer.

Magnesium.—The revolution in the process of manufacturing this metal, for which metallic sodium heretofore formed the starting-point, has reduced the former cost to one-sixth. It is now prepared in Bremen by electrolysis under Graetzel's patent. In consequence of this, its application in the arts will be very largely increased, and it will particularly serve as a most effective illuminating agent, rivalling in cheapness the more expensive light-giving substances or agents.

Milk-sugar.—The manufacture of sugar of milk in Germany has become firmly established, and promises an increased output in the near future.

Naphthalin, recrystallized.—The employment of this substance as an internal medicine, originated by Rossbach, is constantly increasing. It is best administered in the form of trituration with sugar, flavored with oil of lemon. According to the *Journal de Médecine*, the usual doses are, in catarrh of the stomach and intestines, 8 to 80 grains daily; in diarrhœa of infants, 1½ grains every two hours; in typhoid and tuberculous diseases of the intestines, 8 to 24 grains a day. It may also be given per rectum, suspended in a weak mucilage or decotion of marshmallow.

Naphthol.—The demand after this is becoming continually greater. The "Hydronaphthol," introduced as a powerful antiseptic agent—to judge from the description and formula given for it—is nothing else than the well-known β-naphthol.

Osmic Acid.—This acid (as well as some of its salts) which was formerly used in epilepsy and as a caustic for certain morbid growths, is now also employed in [sciatica and similar forms of] neuralgia. Since its aqueous solution does not keep long, Schampiro recommends to dissolve it in glycerin and water:

Osmic acid	gr. 1½.
Distilled water	♏ 90.
Glycerin	♏ 60.

Hypodermic dose: 5 drops at one injection. The above solution is said to keep for weeks.

Quinine.—The past year was not a satisfactory one for the manufacturers. Owing to a diminished demand and increased production, the selling price at times was depressed to the bare cost of manufacture.

Quinine is not likely again to be seized upon by speculators in the same degree as in former times. The advance of science has furnished products which rival with quinine in their effects, and have reduced its consumption materially. Among these are thalline and antipyrin, the latter of which is estimated [by Gehe & Co.] to have reached a consumption in Europe, amounting to *one-fourth* of that of quinine.

Saccharin.—This sweet substance obtained from the coal-tar series—the anhydro-ortho-sulph-amine-benzoic acid; see our February number, page 39—promises to have a useful future [provided its innocuousness is confirmed by further experiments]. The patentees propose a mixture of 1 part of it in with 2,000 parts of glucose, as being in every respect equal, in sweetness, to ordinary sugar. The substance is suggested as a corrigent for medicines of bitter taste, or as a sweetening agent in diseases where sugar is to be avoided (as in diabetes).

Salicylic Acid.—The consumption of this article is constantly increasing, in spite of the open war which has been declared against its use as an antiferment for beer in Bavaria. The stringent measures which have been adopted in that country against any substitutes for malt or hops, and the heavy penalties laid upon infringement of the laws regulating the manufacture and sale of food and drink, have raised the reputation of Bavarian beer in a remarkable degree [and the export has increased in an astonishing ratio].

Strychnine has been in active demand, particularly for destroying the rodents infesting the fields. Even now, after the close of the winter, the demand has not ceased, showing that many of these have survived the winter. A good deal of the strychnine formerly used in Germany came from the United States. At present this country cannot produce enough for home consumption, for want of raw material.

Sulphurous Acid in Glycerin.—A solution of SO_2 in glycerin containing not less than 5% of the former, has been used with great success by Dr. Schottin as a local application to diphtheritic membranes. It is applied with a camel's-hair pencil.

Thalline and Salts.—This remedy was formerly administered in doses of 4 to 5 grains. Since it has been, however, observed to be very quickly ab-absorbed by the stomach, and much more rapidly eliminated by the kidneys than antipyrin, it has occurred to Prof. Ehrlich and Dr. Lagner to employ it in smaller doses at shorter intervals. The doses finally settled upon were ⅜ to 1 grain every hour, gradually increased by about ⅙ grain, in intervals of 2 or 3 hours until the temperature of the body has been reduced to the desired point. When the proper dose has thus been ascertained, it is advisable to administer it either in pill or in mixture every hour during the day and every two hours at night. *Sulphate of thalline* is the salt at present preferred.

Tjen-Tjan Gelatin.—This vegetable gelatin (misnamed Japanese "isinglass") which usually passes in trade under the name *agar-agar* (which latter denotes the algæ from which it is made), is finding extended use for technical and culinary purposes.

Tonka Beans.—The high price of these has helped to increase the consumption of artificial cumarin. It has also been the means of rendering successful the experiment of introducing the American vanilla (*Liatris odoratissima* Willd.)* as a flavoring for tobacco.

*A full description of this, by Dr. Thomas F. Wood, of Wilmington, N. C., will be found in NEW REM., 1882, p. 66. The microscopic characters of the leaves, by W. Kerr Higley, of Lake Geneva, Wis., are published in NEW REM., 1883, p. 260.

Coca.

(Continued from page 102.)

The life of a shrub, so far as the harvest of leaves is concerned, varies between wide limits, say from 7 to 50 years. There are even places where they are said to yield crops for 100 years, and to attain the size of trees. According to Clerc and Grandidier, the shrubs attain their highest development 2 years after the first harvest, retain it for about 4 years, and then gradually deteriorate. This short life, however, is supposed to be due to faulty methods in cultivation.

The leaves are collected either singly or by stripping them off the twigs. This is usually done by women (*polladores*) and children. Work is carried on from early in the morning to late in the evening in order to fill as many *matus* (baskets or aprons full of coca) as possible. These are emptied into sacks, and immediately carried to the haciendas by special laborers (*materos*). It is generally assumed that 2 to 3 *cabezas* (1 cabeza is a furrow of 150 feet in length, containing 100 shrubs) yield 1 arroba (25 Spanish pounds, or 24¼ avoird. pounds) of leaves, which require the labor of 4 to 5 women during the day.

Great care is required in drying the leaves, particularly as the weather—which is very variable in the home of coca—has a decisive influence not only on the success of the harvest, but also on the quality of the leaves after collection.

In well-conducted haciendas, there is a special court-yard, open or closed, which is used as drying ground; and the most progressive of these are carefully paved with black slate (*pizarra*). This is called *cache* in some provinces; in others *matupampa*. In other haciendas, the court-yards are small, the ground merely stamped down and smoothed, occasionally covered with boards, mats, etc., and but seldom paved. Now and then, they contain several stories of wooden platforms or floors.

The method of drying is extremely primitive, and consists in this, that the leaves are spread upon the drying ground, during sunny days, to a height not exceeding about 14 inches, and frequently turned over by wooden sticks. The frequent and sudden rain showers render the drying exceedingly difficult, and often ruin the whole crop, because the leaves acquire a black color by exposure to dampness, and become shrivelled. This unsalable coca is called *coca goñupa*, or *yanacoca*. To avoid this danger, special persons are engaged to watch the weather. When there is the slightest change of the latter, the leaves are returned to the huts, to be again spread out after the rain is over and the water has evaporated from the soil.

The most highly valued and highest priced leaves are those which have been dried in the course of one day (*coca del dia*).

Garcilasso and all other connoisseurs of coca state that the best coca is that which has not been completely dried, but is still flexible, and appears as if it had a hoary coating. A good quality is also furnished by that which has been dried in the course of 2 or 3 days without having become damp in the mean time. The next quality is furnished by leaves which have required a still longer period of drying.

During long continued rain, the leaves which are stored, in a damp condition, in huts, where there is no chance of spreading them out, undergo a process of fermentation, by which they acquire a nauseous taste. The natives call this change *cholarse*.

According to Clerc, the gathered leaves are at the present day not immediately transported to the drying place, but are spread out in the huts to a depth of about 2 inches, and next day dried in the *matupampa*, being frequently turned over.

Leaves which have become black by dampness are subjected to a special process, which consists in exposing them for some time to the sun, and walking upon them with wet feet.

In Brazil, the leaves are usually dried at an open fire or in an oven.

Some method of drying by artificial instead of solar heat, at a temperature not exceeding 35° C. (95° F.), in properly constructed drying rooms, would probably remove many of the difficulties and risks at present encountered.

The dried leaves are kept, in most of the montañas, particularly in Huanuco, under woollen covers, or packed in linen, and laid upon boards in the store house, which latter are required to be dry and somewhat cool.

The leaves are finally packed, by strong pressure with the feet—but only during fair weather—in sacks made of a coarse woollen stuff (*jerga de la sierra*), the color of which differs in different localities. Huanuco sacks are gray or black; those of Vitoc gray and white; those of Huanto and Anco black and brown. Sometimes they are lined with banana leaves. The finished bags are designated by names expressing their weight. In the *yungas* of Bolivia, the leaves are laid as flat upon each other as possible, and regular piles of these pressed together, by means of wooden screw-presses of 26 inches in height and 16 inches in diameter, in wooden forms lined with banana leaves. The bricks thus formed are covered with a coarse fabric made of lama-wool, and packed in bales weighing about 3 arrobas.

In order to protect the bales or bags from moisture during the transportation, they are carefully covered, already on the day of shipment, with woollen covers. In some districts, regular refuge places are built, where caravans may find shelter from rain.

In warm countries coca should not be kept in stock longer than one year, and in colder countries not over eighteen months or two years. This is the opinion of the natives, as reported by Poeppig.

Removal of Nitrous Acid and Ammonia from Water.

IN attempting to prepare distilled water from impure water containing nitrous acid or ammonia, it will generally be found that these impurities pass over into the distillate. This may be prevented, according to Hager, by the use of permanganate and alum. If the water contains ammonia, this must be first removed by the addition of 0.15 to 0.3 per cent (of the weight of the water) of potash-alum. Afterwards the nitrous acid may be oxidized by adding about 0.5 per cent of a dilute solution of permanganate of potassium (1 in 1,000). The nitrous acid is converted into nitric, and combines with the potassium of the permanganate.—*Pharm. Contralh.*, No. 13.

Note.—If the water is filtered or otherwise clear, the above quantity of permanganate may be sufficient. When the water is very impure, however, it is necessary to add a much larger quantity. Indeed, it may be taken as a rule that enough should be added until the permanganate is no longer reduced at a boiling tempera ture. The distillate thus obtained, however, is probably never absolutely free from ammonia. If perfectly pure distilled water is wanted, it should be once more distilled, a small quantity of pure sulphuric or phosphoric acid having previously been added to it.—ED. AM. DR.

Pressure of Wind.

THE pressure of wind to the square foot is estimated at 2, 4½, 8, 12½, 18, 25, and 32½ pounds with wind having a velocity of 20, 30, 40, 50, 60, 70, and 80 miles per hour.—*Sci. Amer.*

FORMULAS.

To Remove Nitrate of Silver Stains.

THE following is suggested by Mr. George R. Underwood: Dip the fingers into a strong solution of cupric chloride. In about a minute, the silver will be converted into chloride, and may then be washed off with hyposulphate of soda solution.—*Chem. and Drugg.*

Sedative in Painful Dentition.

Cocaine Hydrochlorate	4 gr.
Sodium Borate	4 gr.
Syrup of Althæa	64 ♏
Syrup of Poppy, to make	100 ♏

Rub the gums gently with a little of this syrup several times a day.—After *L'Union Med.*

Iodol and Terebene.

Iodol	10 gr.
Terebene	1 fl. oz.

Dissolve and keep in bottles of non-actinic (deep amber-colored or ruby) glass; or keep in ordinary bottles in a dark place.

Used as an antiseptic either by spraying, or by saturating dressings with it.

Sulphur Skin Lotion.

Sulpho-carbolate of Zinc	gr. 20
Oxide of Zinc	dr. 2
Precipitated Sulphur	dr. 1
Eau de Cologne	dr. 6
Glycerin	dr. 6
Rose-water to	fl. oz. 6

Rub up the zinc oxide and sulphur with the eau de cologne, then add the glycerin and rose-water in which the sulpho-carbolate has been dissolved. A pinch of carmine may be used to color.

Cherry Tooth Paste.

A FORMULA recently recently published in the *Chem. and Drugg.* is as follows:

Precipitated Chalk	8 oz.
Powdered Orris	2 "
Sugar	1 "
Glycerin	1½ "
Liquid Cochineal	q. s. to color.
Oil of Cloves	5 drops.
Oil of Wintergreen	2 "
Oil of Peppermint	2 "
Water	q. s.

Rub the orris and chalk with the oils, add the cochineal, then the sugar and glycerin, and sufficient water to make a paste.

Antiphlogistic Powder for Infants.

FOR some time past, a compound powder has been used in some districts of Germany, which is popularly known as "Bismarck powder," and has acquired some reputation, locally, as a remedy for various affections of children, such as painful teething, loose bowels, cough, etc., wherever there is more or less rise of temperature. It is composed of

Tannate of Quinidine	10 parts.
Carbonate of Magnesium	1 part.
Licorice Root, powd.	4 parts.
Sugar	40 "

Of this powder, a small quantity—about 5 grains—may be given every 1, 2, or 3 hours, best in a little milk.—After *Pharm. Centralh.*, 1886, 178.

Moth Destroyer.

1. Naphthalin	50 parts
Carbolic Acid	25 "
Ceresin	25 "

are melted together, and the hot mixture is spread, by means of a broad brush, upon unsized paper, laid upon a hot surface, care being taken that this is not done near any light or fire.

Instead of laying the paper on a hot surface, the paper may be coated with the warm mixture diluted with ten parts of alcohol. As this does not dissolve the ceresin, the mixture must be well stirred with the brush before applying it.

2. Patchouly, cut	10 parts.
Rosemary, cut	20 "
Thyme, cut	20 "
Sage, cut	20 "
Naphthalin	20 "
Oil of Mirbane	2 "
Oil of Turpentine	5 "
Alcohol	50 "

Dissolve the napthalin and oils in the alcohol by the aid of heat, and sprinkle the solution while hot upon the mixed herbs or leaves. Introduce the mixture into bags of suitable size, and lay them betweeen the clothes to be preserved, which should be firmly wrapped, securely packed, and kept in a cool place.—EUGEN DIETERICH in *Pharm. Centralh.*

3. A formula given in one of our exchanges is as follows:

Camphor	4 parts.
Cedar Sawdust	4 "
Black Pepper	2 "
Benzoin	1 part.
Capsicum	1 "

Reduce to a coarse powder, and mix.

Ess-Bouquet.

THE following formula is given by Eugen Dieterich in the *Pharm. Centralh.*:

Triple Extract of Jasmin	770	grs.
Ambergris	2½	"
Musk	½	"
Cumarin	½	"
Heliotropin	½	"
Vanillin	⅛	"
Oil Rose	24	"
Oil Bergamot	8	"
Oil Neroli	8	"
Oil Geranium, French	5	drops.
Oil Ylang	5	"
Oil Rhodium	2	"
Oil Sassafras	2	"
Oil Cinnamon	2	"
Oil Wintergreen	2	"
Oil Orris	1	drop.
Oil Bitter Almonds	1	"
Alcohol	2,300	grs.

Triturate the ambergris and musk with a few drops of water, then add the alcohol, and finally dissolve the other ingredients.

Note.—French oil of geranium is the essential oil of *Pelargonium roseum* Willd. Oil of orris is a solid fat, consisting of myristic acid and a minute proportion of an essential oil. We presume the author means a quantity equal in size to a drop of the other oils.

Terebene Smelling Salts.

Terebene	2 fl. dr.
Aromatic Spir. Ammonia	1½ "
Chloroform	10 ♏
Oil Citronella	4 ♏
" Patchouly	2 drops.
Ammonium Carbonate (in No. 20 powder)	1 oz.
Carmine Coloring	q. s.

Dissolve the two oils in the terebene, and add the chloroform; pour the mixture upon the carborate of ammonium in a bottle, and lastly add the aromatic spirit of ammonia previously tinged with carmine coloring. The latter may be omitted, it being merely useful when it is desired to distinguish this preparation by its external appearance from any other.

The peculiar effects of terebene vapor, when respired, in relieving hoarseness, and when mixed with ammonia, of improving the voice generally, has led to the above formula being devised.—After *Brit. and Col. Drugg.*

Eau de Cologne.*

EUGEN DIETRICH, in *Pharm. Centralh.*, gives the following formulas:

	Parts.
1. Oil Bergamot	10
" Lemon	5
" Rosemary, French, rect	5
" Neroli	3
" Cloves	1
" Ylang	0.2
Acetic Ether	1
Diluted Acetic Acid	1
Alcohol	825
Distilled Water	150

	Parts.
2. Oil Bergamot	10
" Lemon	5
" Rosemary, French, rect	5
" Lavender	1
" Cloves	1
" Neroli	1
" Ylang	0.1
" Wintergreen	0.1
Acetic Ether	1
Diluted Acetic Acid	1
Alcohol	825
Distilled Water	150

3. *Ammoniacal Cologne.*

	Parts.
Oil Bergamot	12
" Lemon	5
" Rosemary, French	2
" Neroli	1
" Lavender	0.5
Water Ammonia	0.2
Alcohol	890
Distilled Water	100

4. *Cologne for Baths.*

	Parts.
Oil Bergamot	5
" Rosemary, French	5
" Lemon	3
" Citronella	1
" Sassafras	2
" Cloves	1
" Wintergreen	1
Ether	5
Acetic Ether	5
Alcohol	800
Distilled Water	200
Eosine	0.02

The faint tint produced by the eosin imparts to the water of the bath a fine reddish tinge. A still better effect is produced by taking phenolphthalein in place of the eosin. This leaves the bath colorless, but the reddish tinge makes its appearance as soon as soap is used.

About 2 fluidounces are sufficient for one bath.

The Dry-Bread Cure is the latest craze, and it comes from Lindenweise. It consists of the cold pack, a diet consisting of dry bread, twice a week a little rice and barley, and three times a week Hungarian wine, all to continue for six weeks. It is said to be effectual in cases of rheumatism and gout (which we consider extremely doubtful in view of recent experience).

Sparteine sulphate has lately been recommended as a heart-tonic. Although Dr. Germain Sée, of Paris, thinks it superior to digitalis, Dr. F. C. Shattuck, of Boston, cites several instances that have come within his knowledge, in which the results following its use were inconclusive. The dose is given as 0.05 to 0.10 Gm. (= ¾ to 1½ grain.)

Another heart-tonic, strophanthin, may be used—when it can be had—in doses of $\frac{1}{60}$ grain hypodermically.

Masking the Odor of Iodoform is accomplished, according to Oppler, by the admixture of freshly roasted coffee. Brunelli claims that a mixture of one part of finely powdered camphor with three parts of iodoform completely masks the odor of the latter.

* The *Pharmaceutische Centralhalle* gives a continuous series of formulæ compiled or devised by Dietrich. The series is copyrighted and ought to be consulted in the original. The above are quoted as samples.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer, for the information of the editor, but not for publication.

WE are indebted to Mr. D. S. White, of Flandreau, Dakota, for the following formula in answer to queries in our April number:

SUCCUS ALTERANS (McDade).

Fl. Ext. Sarsaparilla	ij.
" " Stillingia	ij.
" " Burdock	ij.
" " Phytolacca	ij.
Tr. Prickly Ash	i.
Elix. Aromatic, q. s.	℥xvi.

Dose, 1 teaspoonful increased to a tablespoonful.

No. 1,711.—**Cough Mixture for Horses** (S. F. H.).

The correspondent incloses a formula from *The Farm and Hearth*, which was given in reply to a subscriber who wishes a remedy for his horse's cough. S. F. H. asks: "Would it not be liable to stop the cough *too effectually* for the owner's advantage?" The formula reads:

Hydrocyanic Acid	℥iv.
Powd. Ext. of Licorice	i.
Laudanum	ij.
Camphor Water	℥xv.

Mix, and give two ounces three times a day.

Dilute hydrocyanic acid is evidently intended. In fact, it is not customary to prepare an acid of a greater strength.

No. 1,712.—**Hager's Catarrh Remedy** (E. O.).

The formula recommended by Dr. Hermann Hager is as follows:

Carbolic Acid	10 parts.
Alcohol	10 "
Water of Ammonia	12 "
Distilled Water	20 "

Take two-ounce wide-mouthed bottles, fill them to one-third with the above liquid; then introduce a bunch of [absorbent] cotton of sufficient size to soak up all the liquid.

To be used in incipient cold in the head, coryza, chronic catarrh, etc.

A *stronger* preparation, also recommended by Hager, is the following:

Carbolic Acid	10 parts.
Oil of Turpentine	5 "
Water of Ammonia	12 "
Alcohol	20 "

To be used in the same manner as the preceding.

Hager recommends these as prophylactics against diphtheria. He advises all those who have to handle and be about patients suffering from diphtheria or phthisis to place a vial with this *olfactorium* to the nose when they approach the patient.

No. 1,713.—**Ferrated Cod-Liver Oil** (M. M.).

Ferrated cod-liver oil, containing a *ferrous* salt, may be prepared by dissolving *ferrous* oleate in cod-liver oil.

Ferrous oleate is obtained by double decomposition of ferrous sulphate (green sulphate of iron), and an alkaline oleate. The most convenient oleate is Castile soap. Take

Sulphate of Iron (ferrous)	1 part.
Castile Soap, calculated as dry	1 "
Water	q. s.

Dissolve the Castile soap in 30 parts of hot water, and the sulphate of iron in the same quantity. Mix the solutions while hot, by pouring the iron solution into the soap solution, collect the precipitate, wash it with boiling water, and finally with hot alcohol. Dry it as rapidly as possible. Remove from the exterior of the dry pieces the oxidized portion, and dissolve the remainder in cod-liver oil, so that 100 parts of the product contain 4 parts of the dry oleate of iron.

No. 1,714.—**Salicylic Acid and Oil of Wintergreen** (Drs. A. M. P. and D. F. D.).

Some years ago, a series of experiments made in one of the largest public hospitals of this city rendered it probable that there was a slight difference in therapeutic activity between the natural oil of wintergreen, from Gaultheria, and its double, the oil of birch. Subsequently another more careful series of trials were made, in which care was taken to experiment on one and the same person with both kinds of oils in different attacks of inflammatory rheumatism, or to select two different persons of as nearly similar condition as possible. As a result it was found that there appeared to be no difference between the two kinds of oil, which are identical chemically, except that the genuine oil of gaultheria contains a small quantity of a terpene which is absent (through bad management in distillation) in the other oil.

A recent report published in *The Lancet* contains a statement that the natural salicylic acid obtained from oil of wintergreen is much preferable to the artificial, which is prepared from carbolic acid. This statement appears to have had a more solid foundation some years ago when the commercial product, prepared under Kolbe's patent, was contaminated with some irritating by-product, first noticed by Williams, which could be removed by cautious sublimation or by dialysis. The process of manufacture has, however, been so much improved that the commercial acid now put on the market may be regarded as chemically pure. We have not heard any complaints about it for a long time.

Oil of gaultheria (or of birch) contains about 90 per cent of salicylate of methyl, $C_8H_8O_3$, mol. w. 152, which corresponds to 1 molecule of salicylic acid, $C_7H_6O_3$, =138. Allowing 10 per cent of other constituents as being present in the oil, it will be seen that 138 parts of salicylic acid are represented by about 169 parts oil of wintergreen, or 100 parts of salicylic acid correspond to about 123 parts of oil of wintergreen.

No. 1,715.—**Removing the Marks of Tattooing with India Ink** (J. W. E.).

"Could you in your next issue give a formula or name a preparation for removing India-ink tattooing? I have used strong nitric acid, potassa, potassa cum calce, permanganate of potassium followed by hydrochloric acid and chlorinated lime."

No. So far as we are aware the marks are indelible. The pigment from which the ink is made is carbon, and no chemical agent will affect it. It might be possible to cause such separation and destruction of the deep layer of the skin as to remove it, but this would leave a scar, and is only to be recommended when the area is very small.

No. 1,716.—**Elixir of the Phosphates of Iron, Quinine and Strychnine** (W. S. & Co.).

This correspondent writes:

"Is there any objection to making Elixir Ferri Phos., Quininæ, et Strychniæ as follows, viz., by taking the Elixir Cinchonæ et Ferri (No. 14 of the New York and Brooklyn Formulary), and adding a sufficient quantity of Liquor Strychniæ (Br.) to give the necessary amount of strychnia to each dose. The elixir made in this way is permanent, and does not become dark."

We are much obliged to our correspondent for the suggestion, and will bring it at once to the attention of the National Formulary Committee of the Am. Pharm. Assoc., which will make the necessary experiments in order to test the claim. If this will make the elixir permanent and will keep it from turning dark, it will be a great advantage. Up to the present time, however, the committee believes that the cause of darkening or of instability lies in another direction.

To give an opportunity to such of our other readers as are not in possession of the Brit. Pharm. to try the formula in the way suggested above, we append the formula for

Liquor Strychninæ Hydrochloratis.

Solution of Hydrochlorate of Strychnine.

Synonym: Liquor Strychniæ.

Strychnine, cryst.	9 grains
Dil. Hydrochloric Acid.	14 minims
Alcohol	½ fl. oz. (Brit.)
Distilled water	1½ fl. oz. (Brit.)

Mix the hydrochloric acid with four drachms of the water and dissolve the strychnine in the mixture by the aid of heat. Then add the alcohol and the remainder of the water.

The above solution is intended to be of the strength of (about) 1 grain in 100 minims.

If this preparation is to be used in the elixir of the New York and Brooklyn Formulary, it would require 250 minims (British) to represent the 2½ grains of strychnine. This solution contains a very minute proportion of acid. In the formula contained in the New York and Brooklyn Formulary (Nos. 23 and 24) the presence of acid has been purposely avoided, as this renders the preparations disagreeably bitter. Our correspondent, however, proposes to start with the elixir of Cinchona and Iron (formula 14). The complete working formula would then be:

Elixir of Iron, Quinine and Strychnine.

(Or Elixir of Cinchona, Iron, and Strychnine.)

Phosphate of Iron, U. S.	256 grs.
Citric acid	5 "
Boiling water	1 fl. oz.
Solution of Strychnine	250 min.
Compound Elixir of Quinine (No. 43) enough to make	16 fl. oz.

Of course, if a solution of strychnine is to be introduced at all, it will have to be adjusted so as to correspond to our weights and measures, that is, so that 250 of our minims contain 2½ grains of strychnine.

No. 1,717.—**Bromidia** (Ch. L.).

The exact formula of bromidia is not known. It is alleged to contain "15 grains each of pure bromide of potassium and purified chloral, and ½ grain each of genuine imported extract of cannabis indica and hyoscyamus" in a fluidrachm. Dr. A. B. Lyons, of Detroit, examined it some three years ago (see NEW REM., 1883, 7), and found it to contain, in each fluidounce, about 10¼ grains of the bromide and 11¼ grains of chloral hydrate. The extract of cannabis indica could not be recognized in the mixture, as the resin, of which it is almost wholly composed, is insoluble in aqueous liquids, and was necessarily absent.

No. 1,718.—**Gelatin Bougies** (Cleveland).

In addition to the information given on page 158 of our last volume, we append the following extract from an article in the *Rundschau* (Prag):

As it is absolutely necessary to insure the escape of all air from the melted mass, it is essential to have the moulds in which the bougies are to be cast as hot as possible, which is best accomplished on a steam-bath. The following composition is said to work well:

Gelatin	20 parts.
Water	20 "
Glycerin	40 "

Dissolve, mix, and evaporate to 60 parts.

[This will produce a better result than the formula previously given by us, in which the quantity of glycerin is too large.]

When the mass is to be poured, it should possess the highest possible temperature attainable on the water-bath, and may with advantage be even raised a little higher over a naked fire, care being taken that the mass does not become burned, and that no skin forms on the surface. As soon as the moulds are filled, they are placed in cold water.

The bougies thus prepared are, however, rather soft; in fact, they may be wrapped around the finger; and this is a drawback.

French physicians prefer the bougies known as Reynal's, which are quite hard. According to Dorvault, they are made by casting a mixture of gelatin and gum arabic in moulds. But it is evident that Dorvault was mistaken in this. For, if a small piece broken off one of these bougies is held up against the light, the broken surface parallel to the observer's face, it will be seen that there is an internal square core of a dark color, surrounded by a light-colored mass of a circular outline. This exterior coat is very easily soluble, consists of sugar, and is medicated. The core is a square strip cut from tough jujube paste.

The bougies appear to be made by dipping the core into a warm concentrated solution of sugar containing the desired medicament, and holding it up to drain. The last drop falling from the end congeals to a transparent point. If one of these bougies is placed in water, it dissolves in it quite rapidly, the square interior core remaining behind and undissolved for many days.

No. 1,719.—**Preserving Non-Alcoholic Beverages** (Ch. L.).

This correspondent wants us to suggest a preservative for an orange wine containing no alcohol, but tartaric and citric acids, oil of orange, etc. He also wants to know whether salicylic acid could be used.

If the liquid is purely aqueous, as we infer from the above statement, the amount of salicylic acid which can be got into solution will be quite small, amounting to only about 3 grains for every 2 fluidounces. This quantity is not regarded as likely to be injurious. In fact, it is only in such beverages as are usually taken in larger quantities, and continuously or habitually—such as wine, beer, cider, etc.—that the propriety of the use of salicylic acid, as a preservative agent, has ever been questioned. Aside from salicylic acid, we know of no preservative agent that would combine the property of being innocuous, tasteless, or odorless, so as to be available for a delicately flavored beverage. Boric acid has been occasionally used for such purposes, but it is not by any means proven that it is harmless. Alcohol would, of course, be the best preservative, but, by the direct statement of our correspondent, this is excluded. Sugar would be the next; yet it is evidently not intended to make the preparation as sweet as a syrup.

If the wine is to be kept in tightly-closed bottles, we might suggest to pasteurize it, that is, to place the filled bottles into water, raise the water to boiling, and then to close them hermetically. Should any of the flavoring be thereby lost, it would be easy, just before corking, to introduce into each bottle a small quantity of alcoholic solution of oil of orange. The liquid in the bottles would probably acquire good keeping qualities in this manner, but it would not be quite clear; at least, a sediment would form in the bottles. Possibly the whole bulk of the liquid might be heated at once, allowed to cool, afterwards filtered, and the filtrate again pasteurized, after being transferred to the bottles.

The last German Pharmacopœia has improved the keeping qualities of an otherwise troublesome preparation, namely, the vinous tincture of rhubarb, by the addition of a small quantity of borax, which is not considered objectionable. Perhaps this might be tried in the present case.

No. 1,720.—**Attaching Labels to Tin** (Stockholm, Sweden).

This is one of the constantly recurring queries, and, as it has not been replied to in detail for some time, we will quote a number of the methods recommended or used for the purpose.

1. If the paper is well sized and will resume its original color when the paste is dry, use a solution of balsam of fir, 1 part in oil of turpentine, 2 or 3 parts.

2. Soften 1 part of good glue in water, then pour off the excess, and boil it with 8 parts of strong vinegar (about 8%). Thicken the liquid, while boiling, with enough of fine wheat-flour, or dextrin.

3. Make starch paste, and add to it, while warm, a little Venice turpentine, so that the latter will become evenly distributed through it.

4. Add to starch paste, or any other similar aqueous paste (except that made from gum Arabic) some solution of shellac in borax. The quantity may be easily determined by trial.

4. Paint the spot, where the label is to be put, with solution of tannin, and let it dry. Affix the label previously gummed and wetted.

6. Paint the spot over lightly with a camel's-hair or other brush dipped into chloride of antimony.

7. Make a dilute solution of white gelatin, or, better, of isinglass, about 1 in 20. This is said to adhere without the addition of anything else. We have not tried it.

8. To mucilage of acacia, starch-, dextrin-, or tragacanth-paste, add a little ammonia.

9. Or, add a little tartaric acid. A trifle of glycerin may be added besides.

10. Mucilage of gum Arabic may be rendered much more adhesive by heating 100 parts of it with 2 parts of sulphate of aluminium, previously dissolved in hot water, to boiling, and then allowing to settle. A little tartaric acid and some glycerin added to the clear liquid, after it is decanted, will improve it.

11. Make a mixture of mucilage of tragacanth, 10 parts; honey, 10 parts; and flour, 1 part. We have no experience with this.

12. Roughening the spot with fine emery paper, wiping the place clean, and then attaching labels with ordinary paste, or such as have been rendered more adhesive, is one of the surest ways we know of.

The difficulty of insuring the permanent adhesion of labels on tinned iron, or "tin," at it is usually called, has induced many manufacturers to abandon the use of plain tin-ware, and to substitute therefor the so-called japanned tin, which can be had (in plain tints) at almost the same price as the naked tin itself. There is no difficulty whatever encountered in making labels adhere to the japanned tin by any of the usual kinds of pastes.

No. 1,721.—**Ichthyol** (P. & S.)

This is originally the name of a peculiar product obtained from a bituminous rock found near Seefeld in the Tyrol. The bituminous rock is subjected to dry distillation in iron retorts, during which operation a tarry product of a very offensive odor is obtained. This separates, after a while, a thin-fluid dark-colored oil. The latter is treated with sulphuric acid, whereby sulphurous acid is set free, and the substance converted into a compound sulphuric acid. This is finally neutralized with soda, ammonia or another base. The resulting salt contains about 10% of sulphur in combination (as a sulpho-acid). At first the name ichthyol was restricted to the acid substance itself. Subsequently, when the neutralized acid, in the shape of sodium salt, became more generally known, it was quite usual to see the term ichthyol applied to this. And recently, since the ammonium salt has come into use and almost entirely displaced the sodium salt, we see the name ichthyol applied to denote the *sulpho-ichthyolate of ammonium*.

As an example of a preparation of this salt we give the following formula for

Ichthyol Paste (Unna).

Sulpho-ichthyolate of Ammonium	1 to 3 parts.
Water	10 "
Glycerin	10 "
Dextrin	10 "

Used by Dr. Unna as a rapid-drying agent in all varieties of intertrigo, in slight eczemas of the face and hands where a fatty application would not be borne, and in extensive superficial eczemas.

The ammonium salt above mentioned is thus characterized by the Pharmacopœia Committee of the German Pharm. Association:

[AMMONII SULPHO-ICHTHYOLAS.]
(*Ammonium Sulpho-ichthyolicum.*)
Sulpho-ichthyolate of Ammonium.

A reddish-brown, clear, syrupy liquid of an empyreumatic, bituminous odor and taste. When ignited, it swells up to a voluminous carbonaceous mass, finally being wholly volatilized. Water dissolves it to a reddish-brown liquid of a faintly acid reaction; it is also soluble in a mixture of equal volumes of alcohol and ether. In pure alcohol or ether it is only partially soluble. Petroleum benzin dissolves but little of it. The aqueous solution, when treated with hydrochloric acid, separates a dark resinous mass, which, when separated, is soluble both in ether and water. From its aqueous solution, however, it is again separated by hydrochloric acid or chloride of sodium. On mixing sulpho-ichthyolate of ammonium with solution of potassa, vapor of ammonia is evolved; this solution, when evaporated and the residue ignited, furnishes a liver-brown charcoal giving off hydrosulphuric acid gas when treated with hydrochloric acid.

No. 1,722.—**Wine of Coca** (L. L. A.).

Any attempt to prepare Wine of Coca from the fluid extract is likely to prove a failure, because the menstruum used in preparing the fluid extract dissolves out of the leaves some of a bitter resinous matter which is medicinally inert. A good deal of this may be gotten rid of by diluting the fluid extract with water, filtering and evaporating. But some of it will remain. The best way to prepare a Wine of Coca is no doubt the direct one of exhausting the leaves directly with wine. Such formulæ have been proposed at different times. The following is believed to yield a good product:

Coca leaves, in fine powder	2 av. oz.
Sherry Wine	q. s.
Simple Elixir (New York and Brooklyn Form.)	2 fl. oz.

Moisten the Coca with sherry wine (a good quality of California sherry is preferable to the cheaper imported sherries for making such pharmaceutical preparations), pack it in a percolator, and percolate until 14 fluid ounces have passed through. Mix this with the Simple Elixir.

A formula of Wine of Coca will be proposed by the committee preparing

a draft for the National Formulary of Unofficinal Preparations to be laid before the next meeting of the American Pharmaceutical Association. As the formula has not been definitely settled, and there is no other authority to go by, you may use your own judgment as to the flavoring or sweetening of the "wine."

No. 1,723.—**Formulæ of Proprietary Medicines** (Subscriber).

We are asked to state whether a law has been passed compelling the manufacturers of proprietary medicines to place their formulas on the labels.

In reply we have to say that such a law has not been passed in any State in this country. But at the last meeting of the American Pharmaceutical Association, the report of the Committee charged with an inquiry into the traffic with proprietary medicines was read, in which it was recommended to approve of the draft of a law which should enforce, not the publication of the formulæ of the different preparations, but only the *names* of the constituents, and if any of these belong to the class of poisons, or "potent medicines," declared so by a legal authority, then the *quantity* of this potent medicine contained in the preparation should also be stated. These propositions appeared to receive the support of a majority of the members present at the meeting, but it is doubtful whether more than a very small number really understood the matter in all its bearings, as they had not had a previous opportunity to examine the document at leisure. After the meeting the report was discussed in the pharmaceutical press and at pharmaceutical meetings, but no definite steps have been taken to carry the plan into operation. So far as the Association is concerned, it was never contemplated that the approval of the Committee's report should be immediately followed by an actual carrying out of their plan. It would have been unwise to have done so. The question is very important, and needs to be well discussed before an intelligent conclusion can be reached.

No. 1,724.—**Estimation of Diastase in Extract of Malt** ("Malt").

Extract of malt may be assayed for the quantity of diastase it contains in the following manner:

Heat 2 Gm. of air-dry starch with 10 C.c. of very dilute hydrochloric acid, containing about $\frac{1}{10}\%$ of HCl, and with 60 C.c. of water in a closed vessel for thirty minutes on a water-bath, agitating frequently. Neutralize the liquid with very dilute ($\frac{1}{10}\%$) solution of soda, and make up the volume to 100 C.c. Now make a solution of the extract in water, using at first a solution of 1 Gm. of the extract in 19 C.c. of water (making 20 C.c. in all). Take 10 test-tubes, put into each 10 C.c. of the starch solution, and add to the first 0.1 C.c. of the solution of extract of malt; to thes econd, 0.5 C.c.; to the third, 1 C.c.; to the fourth, 1.5 C.c.; to the fifth, 2 C.c., and so forth, adding to each succeeding one $\frac{1}{2}$ C.c. more of the solution of extract of malt, and set the whole series aside at the ordinary indoor temperature. Now add to the contents of each test-tube 5 C.c. of Fehling's solution, and set them all into a beaker containing boiling water, or in which water is being boiled. The Fehling's solution will thereby become reduced more or less, and should any of it remain undecomposed, that is, should the amount of Fehling's solution added to any one turn out to be in excess, which would be shown by the liquid (after the precipitate has settled) having a bluish tinge, then all test-tubes containing weaker malt solutions may be disregarded. On the other hand, should the Fehling's solution be completely reduced by any one sample, which would be shown by the supernatent liquid being colorless, then any stronger malt solution may be disregarded. The samples now available for the closer determination of the diastase are those which lie between that which yields a bluish-colored liquid and that which gives a colorless liquid. A new series of test-tubes is now arranged, which are charged as before with starch solution, but the quantity of malt solution to be added begins at the first test-tube, with the amount previously found to yield a final blue liquid, and in each succeeding test-tube a quantity increased by 0.1 C.c. is introduced. Should the series of ten test-tubes be insufficient to receive samples, increasing by 0.1 C.c., and ranging between the two limits previously determined, a correspondingly larger quantity (0.2, 0.3 C.c., etc.) may be used, and, if desired, a third series may afterwards be examined with intervals of 0.1 C.c. The point to decide is this: Which is the test-tube in which the 5 C.c. of Fehling's solution have been completely reduced by the glucose present in the liquid in the test-tube, without there still being an excess of glucose? It may be assumed that it is that test-tube containing a colorless liquid (over the settled precipitate) which immediately follows one in which a faint blue tint, from undecomposed Fehling's solution, is still perceptible.

It is generally stated that 1 part of pure diastase can convert 2,000 parts of starch into glucose (best at 75° C., or 167° F.). Yet the effect of diastase is not completed when it has converted a certain amount of starch into sugar, though it may apparently cease to perform further work. If the solution be diluted, or if more time is given, it will still continue to act. Hence, when testing the diastatic percentage of an extract of malt, time, temperature, and the degree of dilution must be taken into consideration. And it would seem that the following conditions, if carefully observed, will lead to uniform results:

1. The temperature of the solution of starch, of the malt solution, and of the air of the workroom during the experiment, should be between 75° and 85° F.

2. The test-tubes should be heated precisely ten minutes, being all immersed at the same time into a beaker having a layer of sand at the bottom, and containing boiling water.

It is not possible, with any degree of certainty, to state that such and such an extract of malt has so much (not more and not less) of diastase. But its diastatic power can be expressed by stating the quantity of starch which a certain amount of it (say 100 parts) can convert into sugar.

No. 1,725.—**Pot-pourri** (S. B.).

This compound, made of a mixture of sweet-scented flowers, salt, and powdered orris root, can best be prepared only where there is an abundance of plants yielding odoriferous leaves or flowers available. Of course, there are many favored spots in this country where this may be done; yet the best compounds of this nature are put up in southern France, where almost any desired ingredient is freely available.

A formula said to be used in France is as follows:

Take of the fresh petals of the pale and red rose, pinks, violets, moss rose, orange flower, lily of the valley, acacia flowers, clove gilli-flowers, mignonette, heliotrope, jonquils, with a small proportion of the flowers of myrtle, balm, rosemary, and thyme; spread them out for some days, and, as they become dry, put them into a jar, with alternate layers of dry salt mixed with powdered orris root, till the vessel is filled. Close it for a month and stir the whole up; then dampen it with rose water.

The above mixture may, of course, be varied in many ways. Many women in southern France prepare such compounds for home use, and each uses such constituents as are most readily accessible.

A little ground or finely rasped East India sandal-wood, or a little East Indian sandal-wood oil, and a very small proportion of tonka bean (best after being extracted with alcohol, so as to retain only a trace of odor) are said to make the odor of such compounds more lasting.

No. 1,726.—**Compound Syrup of Hypophosphites with Iron, Quinine, Strychnine, and Manganese** (Louisville).

You are probably of the same opinion as ourselves when we declare a mixture, such as the above title implies, as unscientific, incongruous, and of uncertain utility. Yet we are well aware that such compounds are quite frequently called for, and even prescribed by physicians, and that the pharmacist is compelled to supply the demand. This fact has been generally recognized, and has led to the establishment of local committees, who were to bring about, if possible, some uniformity in these unofficial preparations. At the next meeting of the Amer. Pharm. Association, to be held in Providence, the draft of a national formulary will be offered, which is partly based on the present New York and Brooklyn Formulary—a work that has helped the pharmacists in this and even more remote sections of the country to get rid of much of the annoyances they had previously to deal with. The committee which prepared this work, recognizing the fact that there was a popular and much advertised syrup of hypophosphites (known by the manufacturer's name) in the market which pretended to contain certain ingredients—the presence of which is not denied here—concluded to devise a formula which would enable the physician to know how much of each constituent the preparation contained, and on the basis of which he might judge whether he ought to use it or not.

Having made these prefatory remarks—which are incidentally intended for some others among our readers with whom we have recently corresponded on the subject—we quote the formula from the New York and Brooklyn Formulary, where it will be found under the simplified title:

SYRUPUS HYPOPHOSPHITUM COMPOSITUS.
(*Compound Syrup of Hypophosphites.*)
(*Compound Hypophosphites.*)

Hypophosphite of Calcium	256 grains.
" of Potassium	128 "
" of Sodium	128 "
" of Manganese	16 "
Solution of Hypophosphite of Iron	96 min.
Sulphate of Quinine	8 grains.
Fluid Extract of Nux Vomica	30 min.
Sugar	12 av. oz.
Water	7 fl. oz.
Hydrochloric Acid	q. s.
Syrup, enough to make	16 fl. oz.

Dissolve the solid hypophosphites in the water, add the sugar, and shake until it is dissolved. Mix the sulphate of quinine with about 1 fl. oz. of the solution, and add enough (about 3 drops) of hydrochloric acid to dissolve it. Then mix it with the rest of the solution, add the solution of hypophosphite of iron and the fluid extract, and, finally, enough syrup to make 16 fl. oz.

Each fluidrachm contains 2 grains of hypophosphite of calcium, 1 grain each of hypophosphite of potassium and sodium, $\frac{1}{2}$ grain each of hypophosphite of iron and manganese, and smaller quantities of bitter alkaloids.

The solution of hypophosphite of iron meant is that prepared after the

same Formulary (No. 32, p. 65), of which you had better procure a copy.

No. 1,727.—**Iodol Solution** (S. B.).

Mazzoni directs the following proportions for making a standard solution, to be used as an antiseptic either by itself, or for saturating gauze with it:

Iodol	1 part
Alcohol	16 parts
Glycerin	34 "

No. 1,728.—**"Liebig's Coca Beef Tonic"** (A Reader).

We do not know either the formula for, nor the mode of preparing this article. Can any of our readers furnish them?

No. 1,729.—**Pharmaceutical Still** (D. S. W.).

You will find the advertisement of Dr. L. Wolff in this number.

Formulæ Asked for.—We have inquiries after the formulæ of the following, which some of our readers may be able to supply:

1. Kendall's Spasm Cure.
2. McClintock's Lotion.
3. Schenck's Mandrake Pills.

BIBLIOGRAPHY.

PRACTICAL HUMAN ANATOMY. A Working-Guide for Students of Medicine, and a Ready Reference for Surgeons and Physicians. By FANEUIL D. WEISSE, M.D., Prosector (1863 to 1865) to the late Valentine Mott, M.D., LL.D., Professor of Practical and Surgical Anatomy, Medical Department of the University of the City of New York. Octavo, 222 lettered plates containing 321 figures. Extra muslin, $6.00; leather, $7.00. New York: William Wood & Co., pp. 456, Royal 8vo.

IT would be difficult to conceive of a more perfect working-guide for the dissector than this. The author has been engaged for many years in its preparation, and has had the services of a very accomplished draughtsman; the result is a work that is thoroughly original, and remarkably elaborate in its details.

COCA, COCAINE, AND ITS SALTS; their History, Medical and Economic Uses, and Medicinal Preparations. By WILLIAM MARTINDALE, F.C.S., Late Examiner of the Pharmaceutical Society, and Late Teacher of Pharmacy and Demonstrator of Materia Medica at University College, Joint Author of the Extra Pharmacopœia. London: H. C. Lewis, 136 Gower st., W. C. 1886, pp. 69.

THIS gives a very comprehensive review of the literature of coca, and is illustrated by a chromo-lithograph showing the botanical characteristics of the drug. In the construction of the book, the hygiene of the eye has been duly regarded in using blue ink on green paper.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION at the thirty-third annual meeting, held at Pittsburg, Pa., Sept., 1885. Also the Constitution, By-laws, and Roll of Members. Philadelphia: Published by the Association, 1886, pp. 694, 8vo.

IN addition to the usual lists of officers and members, the work contains a complete report of the proceedings, including reports and papers, and, in an appendix, the text of New York and Brooklyn Formulary of unofficinal perparations, covering 29 pages. The frontispiece is an excellent portrait of the late Henry B. Parsons. The whole is a creditable piece of work and should be coveted by every pharmacist who is not already a member of the association.

A COMPEND OF PHARMACY. By F. E. STEWART, M.D., Ph.G., etc. Based upon Prof. Joseph P. Remington's "Text-Book of Pharmacy." Philadelphia: P. Blakiston, Son & Co., 1886, pp. 196, 12mo. Cloth, $1.00; interleaved, $1.25.

THE author is already well known as a writer on subjects allied to pharmacy. He has condensed in the compass of a book which will fit the pocket a great variety of material in such shape as to render it very useful for the student as a means for finding what he does not know.

THE PRINCIPLES AND PRACTICE OF SURGERY. By FRANK HASTINGS HAMILTON, A.M., M.D., LL.D., etc. Illustrated with 472 engravings. Third edition, revised and corrected. New York: William Wood & Co., 1886, pp. 989, 8vo.

THIS well-known treatise by one of the masters of American surgery is characterized by its conservative views and the authority which is acquired from the long experience of its author. The most considerable additions relate to the chapters on Anæsthetics and the art of primary union which have become so essential in the surgery of the period.

(1.) DISEASES OF THE SPINAL CORD. By BYROM BRAMWELL, M.D., F.R.C.P. (Edin.), etc. 53 colored plates, and 102 fine wood engravings. Second edition. New York: William Wood & Co., 1886, pp. 298, 8vo.

(2.) INSANITY AND ITS TREATMENT. Lectures on the Treatment, Medical and Legal, of Insane Patients. By G. FIELDING BLANDFORD, M.D. (Oxon.), etc. Third edition. Together with Types of Insanity. An illustrated guide in the Physical Diagnosis of Mental Disease. By ALLAN MCLANE HAMILTON, M.D., etc. New York: William Wood & Co., 1886, pp. 379, 8vo.

(3.) HANDBOOK OF PRACTICAL MEDICINE. By DR. HERMANN EICHHORST, Professor of Special Pathology and Therapeutics, and Director of the University Medical Clinic, in Zurich. Volume I.: Disease of the Circulatory and Respiratory Apparatus. 103 wood engravings. New York: William Wood & Co., 1886, pp. 407, 8vo.

(4.) THE GENUINE WORKS OF HIPPOCRATES. Translated from the Greek with a Preliminary Discourse and Annotations. By FRANCIS ADAMS, LL.D., Surgeon. In two volumes. Vol. I. New York: William Wood & Co., 1886, pp. 390, 8vo. With two plates.

THE four volumes, above enumerated, belong to the current series of Wood's Library of Standard Medical Authors. They thoroughly justify the title of the series in the high character of the works selected for republication in this form, and there has been no apparent saving in expense in making each volume a credit to the art of book-making. The number of illustrations is in itself remarkable as compared with the medical works of only a few years since, and their quality is all that could be desired for the purpose.

CALENDAR OF THE UNIVERSITY OF MICHIGAN for 1885-6. Ann Arbor: Published by the University, 1886.

THIS 8vo pamphlet of 207 pages is a complete directory to all the departments of the University and contains all useful information for those who desire information respecting the courses of education, terms, etc.

Pamphlets Received: Variations de Compositions et Réactions Chimiques des Humeurs Normales et Morbides de l'Appareil Génital de la Femme. DR. P. MÉNIÈRE (d'Angers). Paris, 1885, pp. 29, 8vo.—The Introductory Address of the Fifth Lecture Course at the Albany College of Pharmacy. Delivered Oct. 5th, 1885, by WILLIS G. TUCKER, M.D., Professor of Chemistry. Albany, 1885. Published by the class, pp. 14, 8vo.—The Inertia of the Eye and Brain. By JAMES MCK. CATTELL (Reprinted from *Brain*), pp. 20, 8vo.—Sanitary Engineering. By WILLIAM CAIN. Third edition. Raleigh, N. C., 1885 (Extract from Report of State Board of Health), pp. 90, 8vo.—Sketch of the Botanical Work of the Rev. Moses A. Curtis, A.M., D.D., F.A.A.S. By THOMAS F. WOOD, M.D. Raleigh, N. C., 1885, pp. 31, 8vo. With portrait.—Plan de Reforma de la Enseñanza Oficial y Litre de las Sciencias Biologicas. By DR. D. IGNACIO VALUETI y Vivo. Barcelona, 1885, pp. 32, 8vo. (Thesis.)—Die Alte und die Neue Medizin. By Dr. Mariano Semmola, of Naples. Translated by PROF. DR. VINCENZ MEYER. Naples, 1885, pp. 187, 8vo.

New Books.

Binz, Prof. Dr. C. Vorlesungen über Pharmakologie. Für Aerzte und Studirende. Complete 3 in 3 parts (last just out). 8vo, Berlin. 22 marks.

Dammer, O. Kurzes chemisches Handwörterbuch (second edition). 8vo, Stuttgart. (In about 12 numbers) à 1 mark.

[An indispensable work of ready reference, containing all that is essential, without going into minute details.]

Dupre, A. A Short Manual of Chemistry. 8vo, London, 1886. 7s.6d.

Dorvault's L'Officine. The eleventh edition of this well-known work, edited by Fréderic Wurtz, has just appeared.

Eidherr, Ed. Der chem.-techn. Brennereileiter. 8vo. Wien (Hartleben). 3 marks.

Fischer, Dr. Bernhard. Lehrbuch der Chemie für Pharmaceuten. 8vo, Stuttgart, 1885. (94 illust.) Pp. 710. 13 marks.

PERSONAL.

John Farr Weightman, M.D., of the firm of Powers & Weightman, died in Philadelphia, May 6th, at the age of 41 years. Since 1874 he had charge of the quinine department of the firm. He had been an invalid for several years, and although a constant sufferer, had been able to continue his work until a short time before his death.

Paul Fritzsche, of the firm of Fritzsche Brothers, of New York, importers of essential oils, died in New York of Bright's disease on Friday, May 7th, at the age of 39 years, after a short illness. The house was established in 1870 as a branch of the Leipzig firm of Fritzsche, Schimmel & Co.

Dr. Den Ricardo de Sadaba y Garcia del Real is the recently appointed Professor of Practical Pharmacy in the Faculty of Parmacy, of Madrid, Spain.

Dr. Don Joaquin Barnet y Ruiz, Professor in the Faculty of Pharmacy of the Royal University of Havana, Cuba, lately died in consequence of extensive burns caused by explosion of ether in his laboratory.

Dr. Plannellas Llanos, Professor of Botany and Zoology in the Royal University of Havana, is dead. He was a Knight of the Order of Charles III., and had greatly improved the condition of the botanic garden connected with the university, and died at an early age.

Mr. Melseus, a distinguished French chemist, and member of the Academy of Sciences, has lately died. He was the author of several discoveries: among others the curative effect of iodide of potassium in poisoning by mercury or lead, for which the Institute of France awarded him a prize.